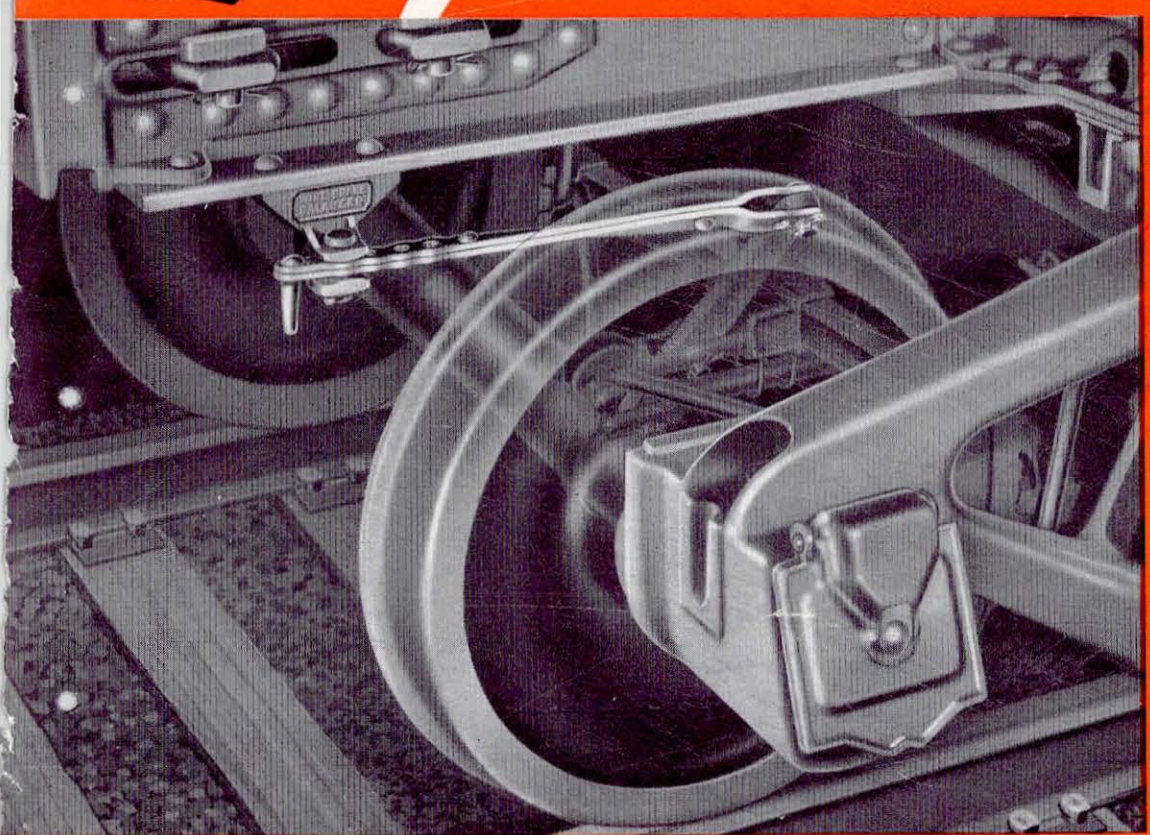
SEPTEMBER 12, 1942

Railway Age

Founded in 1856

McCARTNEY LIBRARY
GENEVA COLLEGE

Wine BRAKE BALANCER
EQUALIZES
BRAKE
FORCES

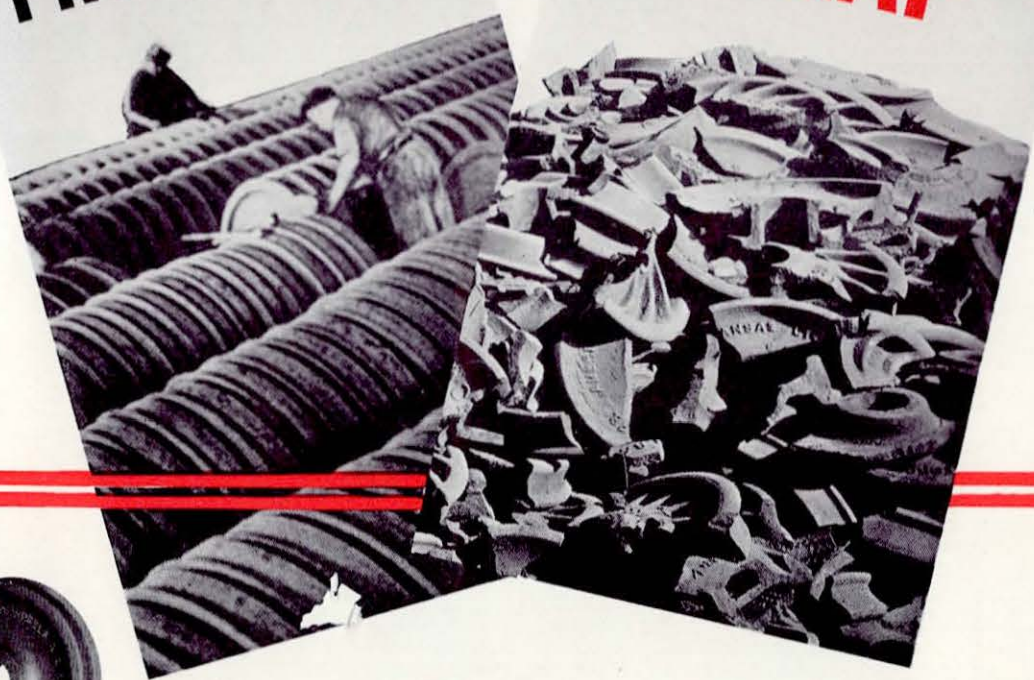


REDUCE TRUCK MAINTENANCE

THE *Wine* RAILWAY APPLIANCE CO.
TOLEDO OHIO

VICTORY
Demands VOLUME PRODUCTION

VOLUME PRODUCTION Requires SCRAP



The manufacture of chilled car wheels is no exception. Under our wheel exchange plan, by which you receive new wheels for old on a conversion charge basis, discarded chilled wheels are speedily melted and recast into new and better wheels for your freight cars.

You can help conserve vital metal, speed delivery of new chilled car wheels, keep defense production rolling to its destination and help hasten victory, by immediately returning every scrapped chilled car wheel to one of our foundries.

Make your scrap give the Axis a rap!

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

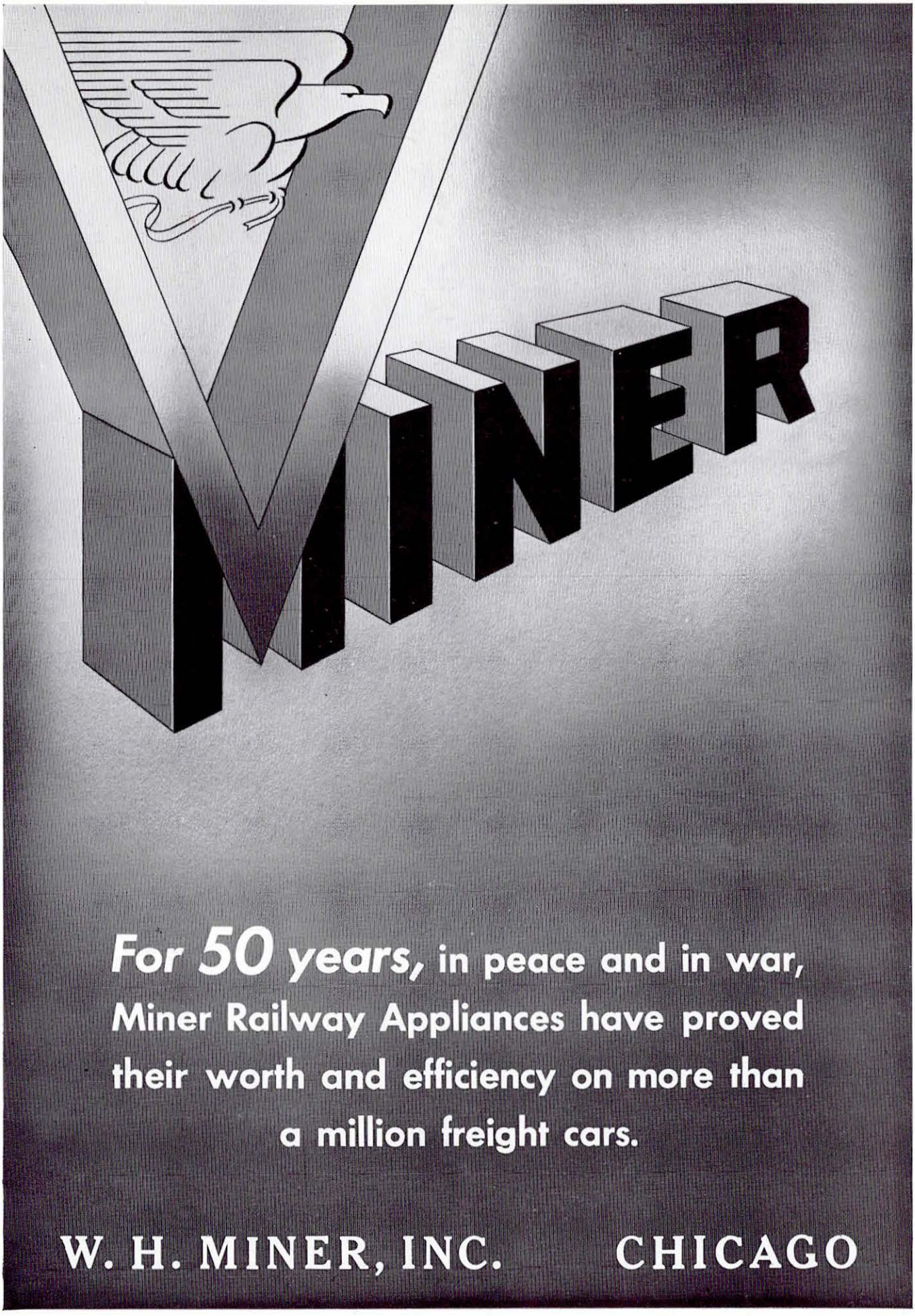
230 PARK AVENUE,
NEW YORK, N. Y.

445 N. SACRAMENTO BLVD.,
CHICAGO, ILL.

AMCCW

ORGANIZED TO ACHIEVE:
Uniform Specifications
Uniform Inspection
Uniform Product

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 113, No. 11.


MINER
For 50 years, in peace and in war,
Miner Railway Appliances have proved
their worth and efficiency on more than
a million freight cars.
W. H. MINER, INC. CHICAGO

ANY
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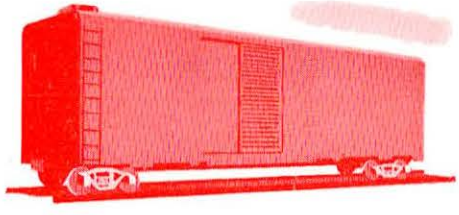
WAY YOU FIGURE IT !!

× DOUBLED NATIONAL INDUSTRIAL ACTIVITY, AS CALLED FOR BY OUR WAR PROGRAM, DEMANDS CORRESPONDINGLY MULTIPLIED MEANS OF TRANSPORTATION.

− EACH COASTWISE SHIP SUNK OR DAMAGED BY ENEMY ACTION SUBTRACTS FROM OUR WATER-BORN TRANSPORT AND THROWS NEW BURDENS ON THE LAND.

÷ ALTHOUGH THE RAILROADS HAVE DONE WONDERS, THE NUMBER OF FREIGHT CARS IN SERVICE HAS BEEN DIVIDED FAR BELOW WHAT IT WAS IN THE LAST WAR.

\+ ALL OF WHICH ADDS EVEN MORE TO THE VALUE OF A.C.F. FIGHTING FREIGHT CARS WHICH WILL AID OUR COUNTRY TO CARRY MORE GOODS, AND CARRY THEM FASTER, TO THE QUICKER AND DECISIVE VICTORY!



The greatest pressure ever known is being thrown on all our systems of transport, by land, air, and sea. So far as the railroads are concerned it means that every last ton-mile must be wrung from every freight car now on the rails. And every added car that can be made to roll, must roll at the earliest possible moment. For even the *million tons of freight now moving a mile each minute of the day and night* may not be enough to make certain of defense against 'too little . . . and too late' with the bulwark of MORE . . . and FASTER! » » » In step with this great achievement A.C.F. facilities are geared to continue to put the utmost in carrying capacity and availability into every A.C.F. freight car that rolls out of our shops — meeting the demands of these critical times for cars and more cars!

WHATEVER A.C.F. BUILDS — IT IS KNOWN TO BUILD WELL!

AMERICAN CAR AND FOUNDRY COMPANY

New York • Chicago • St. Louis • Cleveland • Philadelphia • Pittsburgh • St. Paul • San Francisco

A.C.F.

The Unpredictable Future. With troop movements making the assignment of cars practically unpredictable, batteries are today working harder than ever before. One characteristic of the alkaline battery is proving itself invaluable in these hectic times: its performance is fully predictable—it is *not* subject to sudden failure on the run—and it has the longest life.

Light Weight Where It Counts the Most. Not only does a lightweight battery reduce total car weight . . . it also reduces stresses on the structural members of the car by considerably more than the usual weight-stress ratio. In fact, the battery is normally mounted at the place where every pound saved may reduce these stresses as much as five pounds saved somewhere else. Alkaline batteries weigh the least.

Less Work, More Haul. Past performances for alkaline batteries are yielding bonuses now. Their freedom from trouble calls for less time out of service—more time on the road. This makes for more efficient operation in days when every car is working harder than it ever worked before.

★

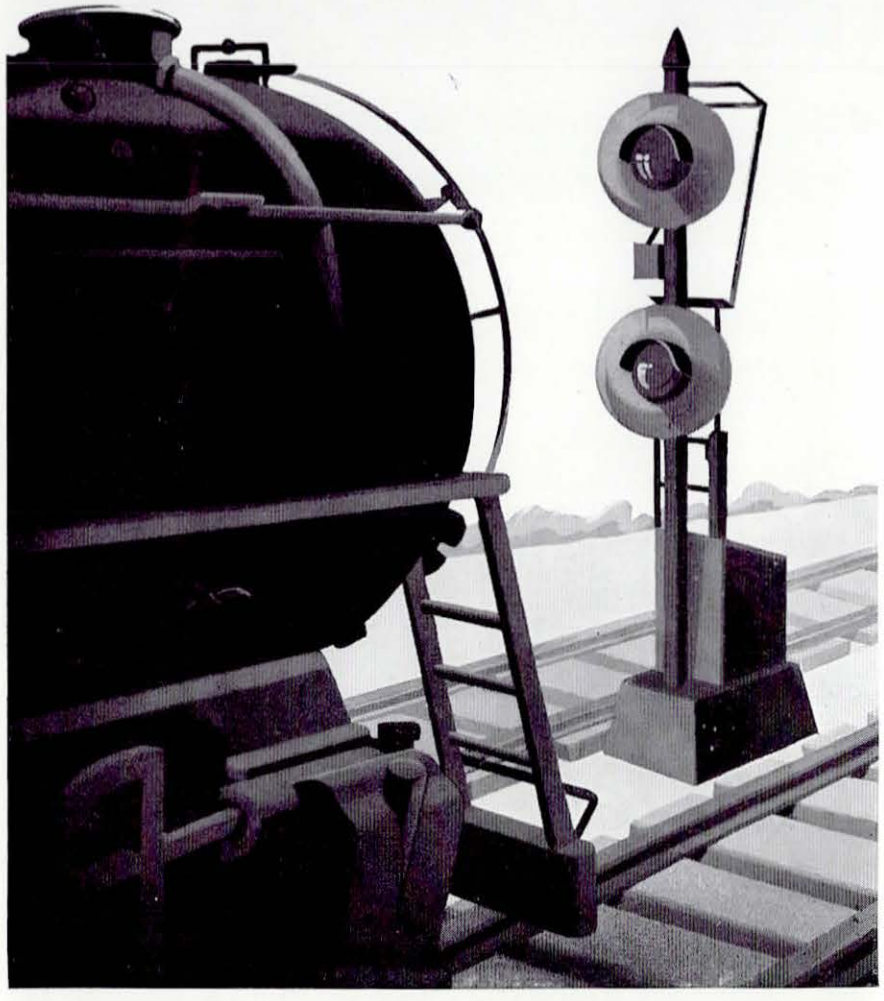
The advantages of the alkaline battery are exclusive with Edison in U. S. A.

Edison Storage Battery Division
Thomas A. Edison, Inc.
WEST ORANGE, N. J.

THIS POWER must not fail

The experience on railroads has been borne out by the experience in manufacturing plants—as a power unit the Edison Alkaline Battery is without equal for downright dependability. Battery industrial trucks provide vital material handling for industry—and there you will find that considerably over half of all the batteries used are of the alkaline type. Railroads have found also that their performance is predictable.

Electrically, chemically, structurally, they are made to order for today's stringent demands. Dependability is the reason for the success of alkaline batteries in railway passenger car service, throughout industry, in mines and aboard ship. These batteries help the railroads "Keep 'em moving" because they do nothing to keep 'em *from* moving!



RAILROADS NEED THE DEPENDABILITY OF

Edison Alkaline BATTERIES

The steel industry must have scrap . . . over 140,000 tons per day . . . a half ton for every ton of new steel produced.

The railroads with their far-flung properties are an important source of scrap and they have already set well organized scrap drives in motion.

Much scrap has been discovered . . . but not enough . . . not nearly enough. Scrap must keep coming if the furnaces are to keep on pouring.

Scrap is another major war contribution being made by the railroads

AMERICAN STEEL FOUNDRIES

Chicago

EDGEW

Contribute Im

Some of the new Southern Pacific Box Cars are equipped with Edgewater Ring Spring Draft Gears — the Gear with high capacity and low weight.

SOUTHERN PACIFIC LINES

IMPORTANT FACTORS CONTRIBUTED BY EDGEWATER DRAFT GEARS

1—CAPACITY
High capacity provides efficient cushioning to protect cars.

2—ENDURANCE
Long gear life provides continued protection.

3—SMOOTH ACTION
Closes smoothly at high speeds or low.

4—UNIFORMITY
All gears have uniformly high quality.

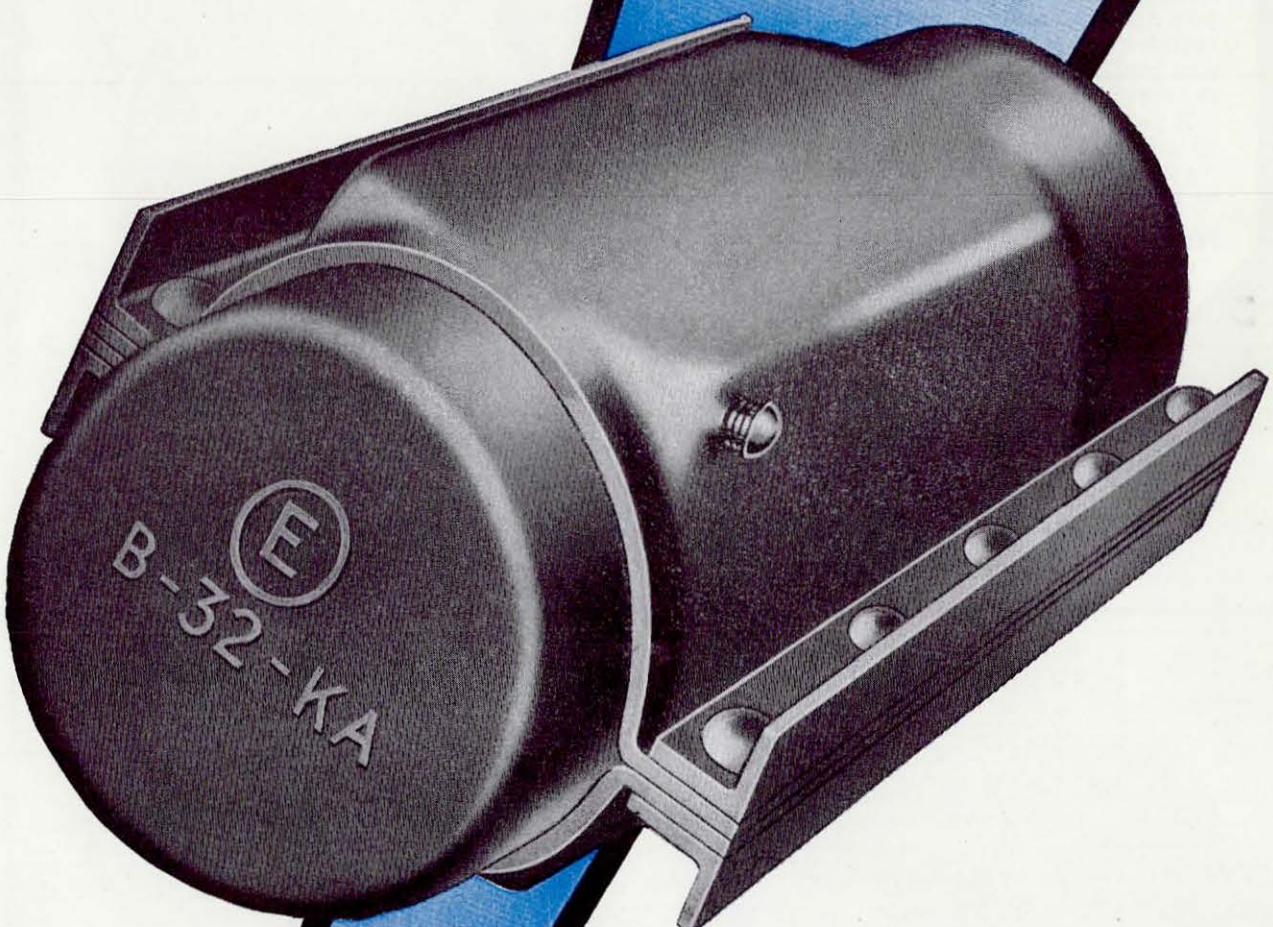
5—RELEASE
Release is quick and positive after impact. Destructive surges are prevented.

6—SIMPLICITY
It is furnished as a single self-contained unit.

EDGEWATER STEEL COMPANY • PITTSBURGH, PA.

ATER DRAFT GEARS

portant Factors to Freight Car Progress



Atlanta, Ga. Baltimore, Md. Boston, Mass. Chicago, Ill. Cleveland, O. Kansas City, Mo. Louisville, Ky. New York, N.Y
Philadelphia, Pa. Portland, Ore. St. Louis, Mo. St. Paul, Minn. San Francisco, Cal. Seattle, Wash. Tulsa, Okla. Washington, D.C.

To "git thar fustest with the mostest"* war trains need dependable track

You can keep your fast, heavy-duty track in condition with minimum use of critical materials and labor.

Pressure grouting of water pockets and soft spots in track with portland cement grout stiffens the subgrade, keeps track in line and grade —reduces maintenance.

Track that needs little attention releases maintenance labor for other jobs. And track can be grouted without interference to operation—pressure grouting is done under traffic—there is seldom need for slow orders.

If you have soft track and water pocket conditions, pressure grouting may be your best solution. Ask us for further information.

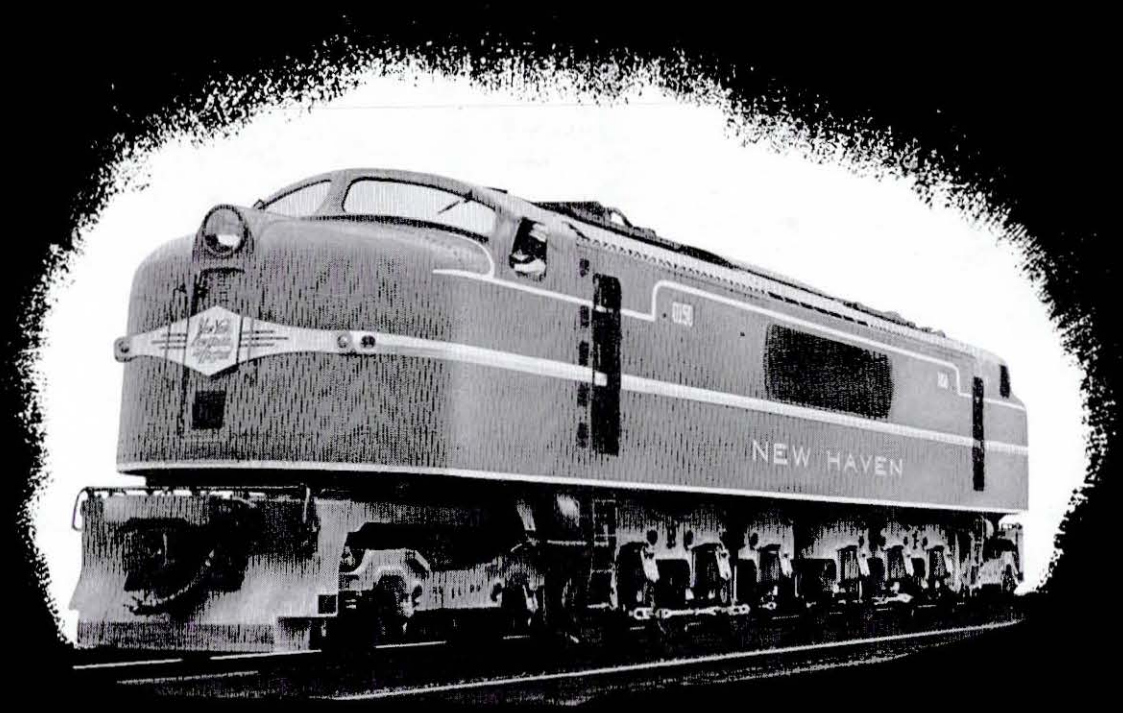
PORTLAND CEMENT ASSOCIATION

Dept. 9b-26, 33 W. Grand Ave., Chicago, Ill.

*CONFEDERATE GENERAL NATHAN B. FORREST'S SUCCESS FORMULA FOR WINNING BATTLES

5 more Electrics for

NEW HAVEN



New Westinghouse-Baldwin Freight Locomotives—

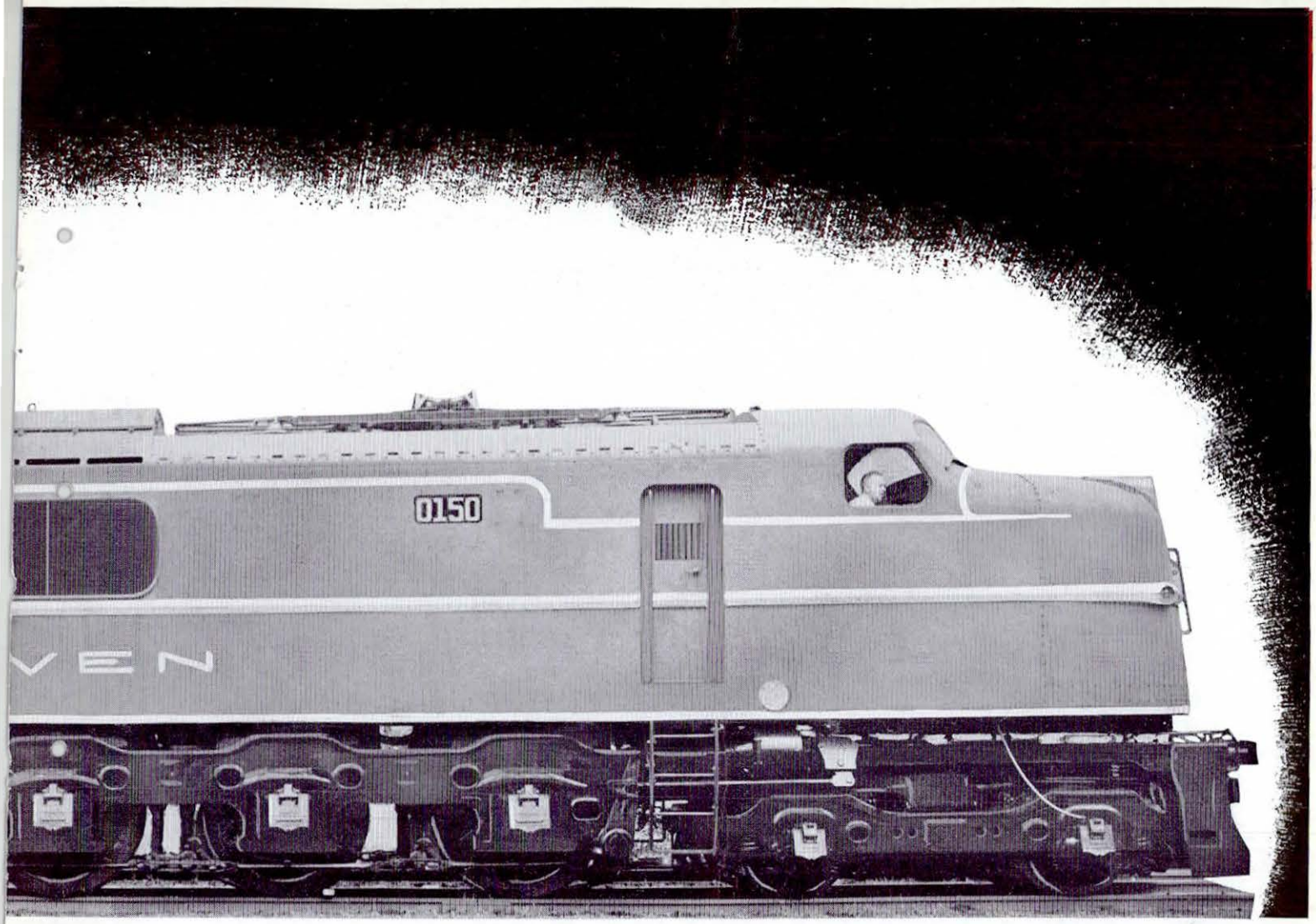
JOIN ONE OF THE WORLD'S LARGEST ELECTRIC FLEETS

Westinghouse

New Haven electric fleet

85%

WESTINGHOUSE EQUIPPED



One of the five new Westinghouse-Baldwin electric freight locomotives now keeping wartime traffic rolling on the New Haven.

Since New Haven pioneered with Westinghouse thirty-five years ago, Westinghouse-Baldwin electric locomotives on this busy eastern line have proved their economic value in hauling heavy freight and passenger traffic. Today over 85% of New Haven's electric fleet is Westinghouse, including passenger, freight, switching locomotives, and multiple-unit cars.

To help meet heavy wartime hauling assignments with traditionally fast New Haven service, five new 4860 hp, 250 ton, Westinghouse-Baldwin freight locomotives have just been added. These new electric locomotives are especially designed to handle 125-car freight trains with fast acceleration and high operating speed.

SINCE 1907...

First of 41 Westinghouse-equipped passenger locomotives to initiate electric revenue service for the New York, New Haven & Hartford Railroad (1907).

New Haven —

WESTINGHOUSE PIONEERS IN RAILROAD ELECTRIFICATION

1907—First electric revenue service begins with 41 Westinghouse passenger locomotives. Westinghouse-equipped power house, substation and distribution system delivers energy through overhead trolley at 11,000 volts single-phase.

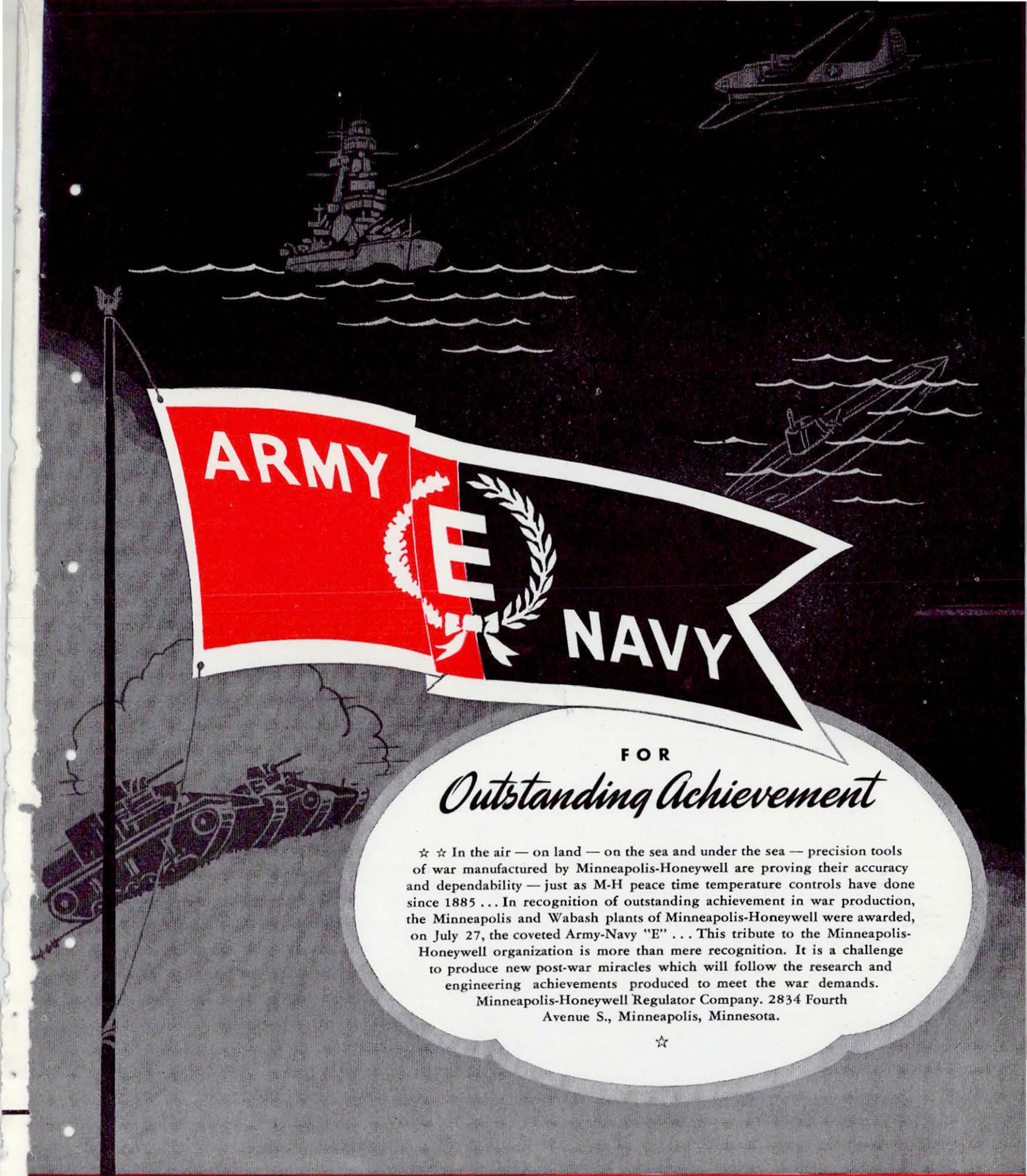
1914—The initial installation of thirty-three miles from Grand Central to Stamford has proved so eminently successful that the electrification is extended from Stamford to New Haven, an addition of thirty-nine miles, giving a total of 120 road miles, including 590 track miles under electric operation.

1924—With yards and several branch lines electrified, the New Haven now has the most comprehensive electrification in the world. A total of 117 electric locomotives and 100 cars of the multiple-unit type for suburban service are in operation.

1942—Today New Haven-Westinghouse's pioneering results in improvements that make electric service outstanding for speed, hauling power, and availability.

J-15069

Westinghouse *Time saver for American Railroads*



FOR

Outstanding Achievement

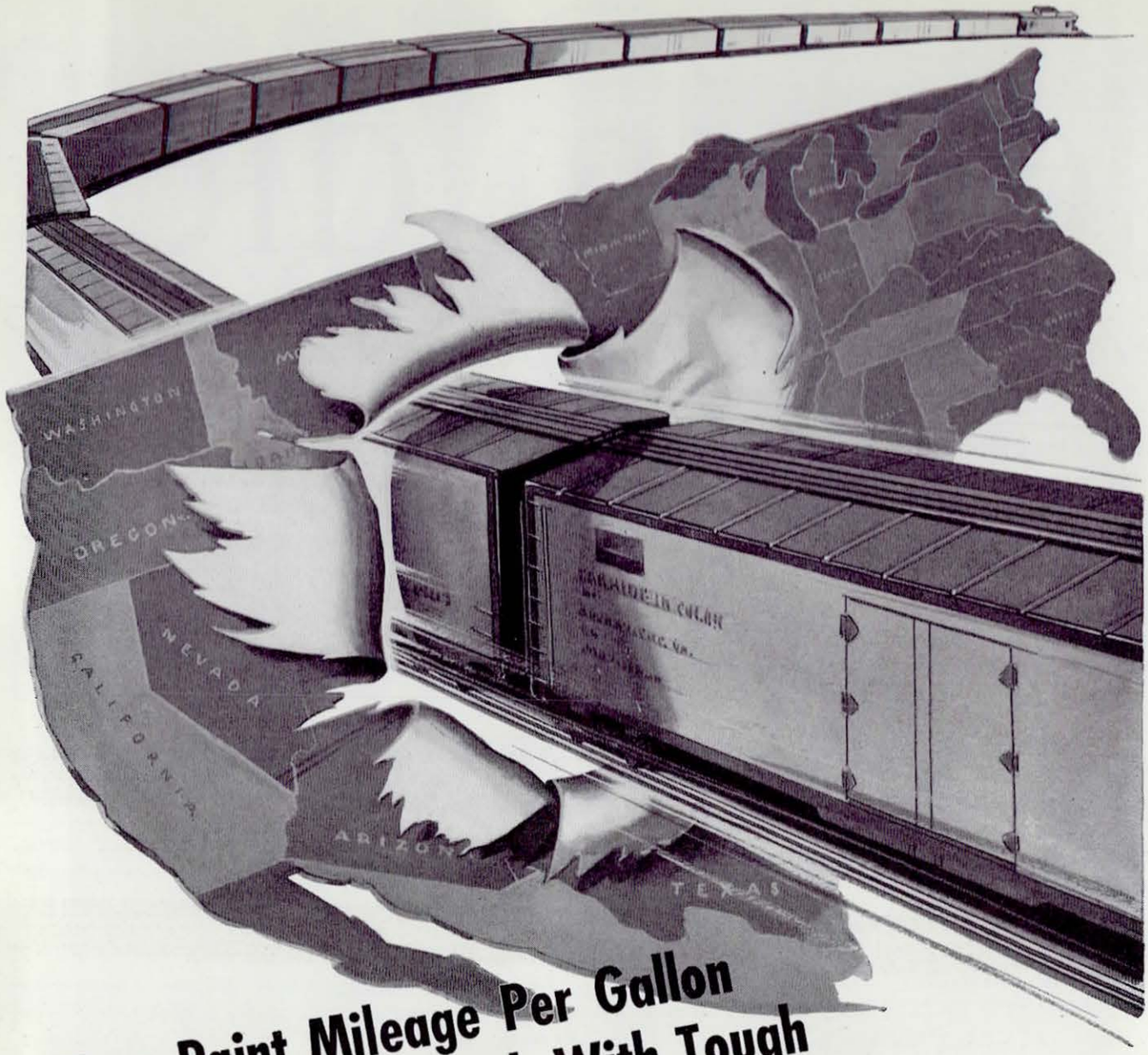
☆ ☆ In the air — on land — on the sea and under the sea — precision tools of war manufactured by Minneapolis-Honeywell are proving their accuracy and dependability — just as M-H peace time temperature controls have done since 1885 . . . In recognition of outstanding achievement in war production, the Minneapolis and Wabash plants of Minneapolis-Honeywell were awarded, on July 27, the coveted Army-Navy "E" . . . This tribute to the Minneapolis-Honeywell organization is more than mere recognition. It is a challenge to produce new post-war miracles which will follow the research and engineering achievements produced to meet the war demands.

Minneapolis-Honeywell Regulator Company. 2834 Fourth Avenue S., Minneapolis, Minnesota.

☆

MINNEAPOLIS-HONEYWELL

Regulator Company



More Paint Mileage Per Gallon For Your Rolling Stock With Tough PITTSBURGH CARHIDE

NORTH, south, east or west—Carhide will give your rolling stock more paint mileage per gallon than any other car finish you can use. That's been proved by maintenance men in all parts of the country.

A car on the track is worth a dozen in the shop—so Carhide not only saves money in actual painting expense, but pays a big profit by keeping cars more continuously in service.

The Carhide finishing system is outstanding from every angle. It sprays faster and smoother—covers better—dries faster and tougher—adheres tenaciously to wood or metal—defies hot, cold, dry or humid climates. Pittsburgh has spent years in developing Carhide. No expense has been spared to make it the most economical finish you can use.

Write for complete details about quick-drying, durable Carhide and learn how it gives you more paint mileage per gallon. You are invited to submit your problems to our Studio of Creative Design, which will gladly make color sketches for you.

PITTSBURGH PLATE GLASS COMPANY

Industrial Paint Division • Pittsburgh, Pa.

Factories: Milwaukee, Wis.; Newark, N. J.; Houston, Texas; Los Angeles, Calif.; Portland, Ore.

The Thresher Varnish Company, Dayton, Ohio

PITTSBURGH PAINTS

RAILWAY FINISHES

Smooth as Glass

FOR

Outstanding Achievement

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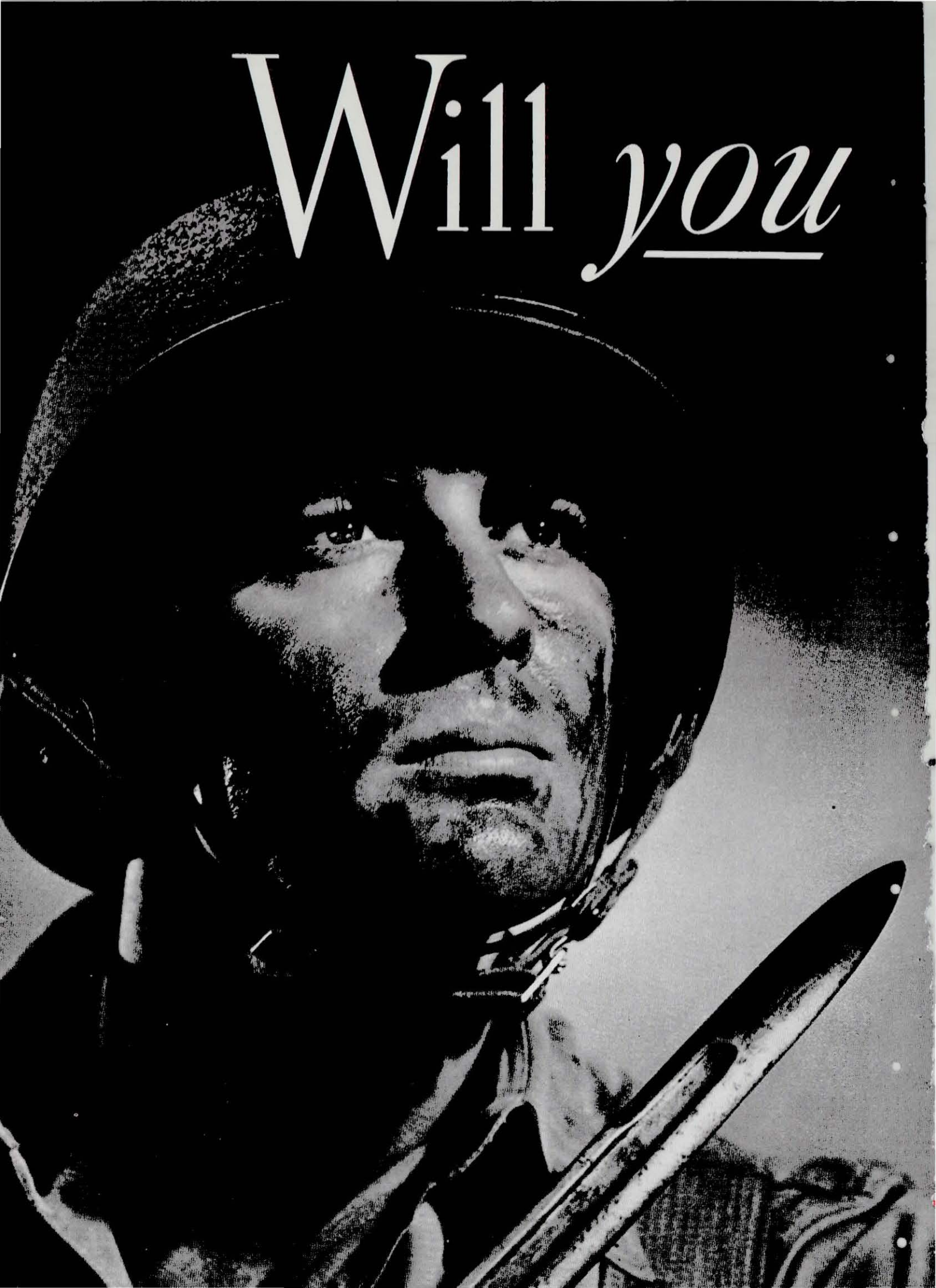
MINNEAPOLIS-HONEYWELL

Regulator Company


Will you

let him die?

-because of the little things you don't do?

He's a real fellow—a healthy, husky chap—maybe your own son, brother, nephew, friend. Yesterday he had a promising future at his finger-tips. Today he's out there giving everything he has to protect it—and your future, too.

BUT—unless he gets as much or more, as good or better fighting tools than the enemy—he and his buddies may die. Are YOU going to stand by and let that happen when you can help him? Sure, you're doing big things in your plant—but how about the seemingly *little things* that may decide whether or not you will be able to do big things tomorrow? How about your alloy scrap steel, for instance? Are you segregating it as you should?

WHAT ABOUT ALLOY STEEL SCRAP SEGREGATION? HERE'S WHY IT IS SO VITAL!

Fighting tools are made of steel. More armament demands more steel—including huge tonnages of *ALLOY STEEL.* And the steel industry is striving mightily to furnish it.

BUT, in spite of rapid expansion of facilities, and the 24-hour-a-day sweating toil of thousands of skilled men of steel, *SUFFICIENT ALLOY STEEL CANNOT BE PRODUCED UNLESS THE INDUSTRY GETS MORE NICKEL, CHROMIUM AND OTHER CRITICAL ALLOYS.* For these are the elements needed to make steel tough, strong and hard enough to stand up under the gruelling service in the mechanized armament which wins wars today.

If you are working alloy steel, your scrap piles and boxes contain valuable amounts of nickel, chromium, molybdenum and other vital alloys which can be used in making new alloy steel. BUT to use them immediately and efficiently, *the chips, turnings, shearings and other scrap from each grade of steel must be kept separate—segregated at the machine and each lot correctly labeled with the grade number (SAE, AISI, NE or other) of the steel.*

If you do not segregate your alloy steel scrap, it will mean just this: (1) Alloys in the scrap may be lost or wasted because the alloy content is unknown when the scrap is charged into the furnace; or (2) the heat of steel may be ruined; or (3) the scrap must be melted down, poured into ingots and analyzed. This ties up skilled furnace crews and furnaces which should be turning out finished steel. Chemists and metallurgists must take time to analyze the ingots to determine what and how much alloys they contain. Then the scrap ingots must be charged into the furnace again when the desired analysis is being produced. *Such waste aids only the enemy.*

Our fighting men need good fighting tools—QUICKLY. Fabricators need alloy steels to make them. The steel industry needs alloy scrap of *KNOWN ANALYSIS* to make more alloy steel. *Will you help us to help our armed forces by issuing an order NOW to your plant to segregate alloy steel scrap and return it PROMPTLY?*

REPUBLIC STEEL — PRODUCTION FOR VICTORY

This Advertisement Sponsored by

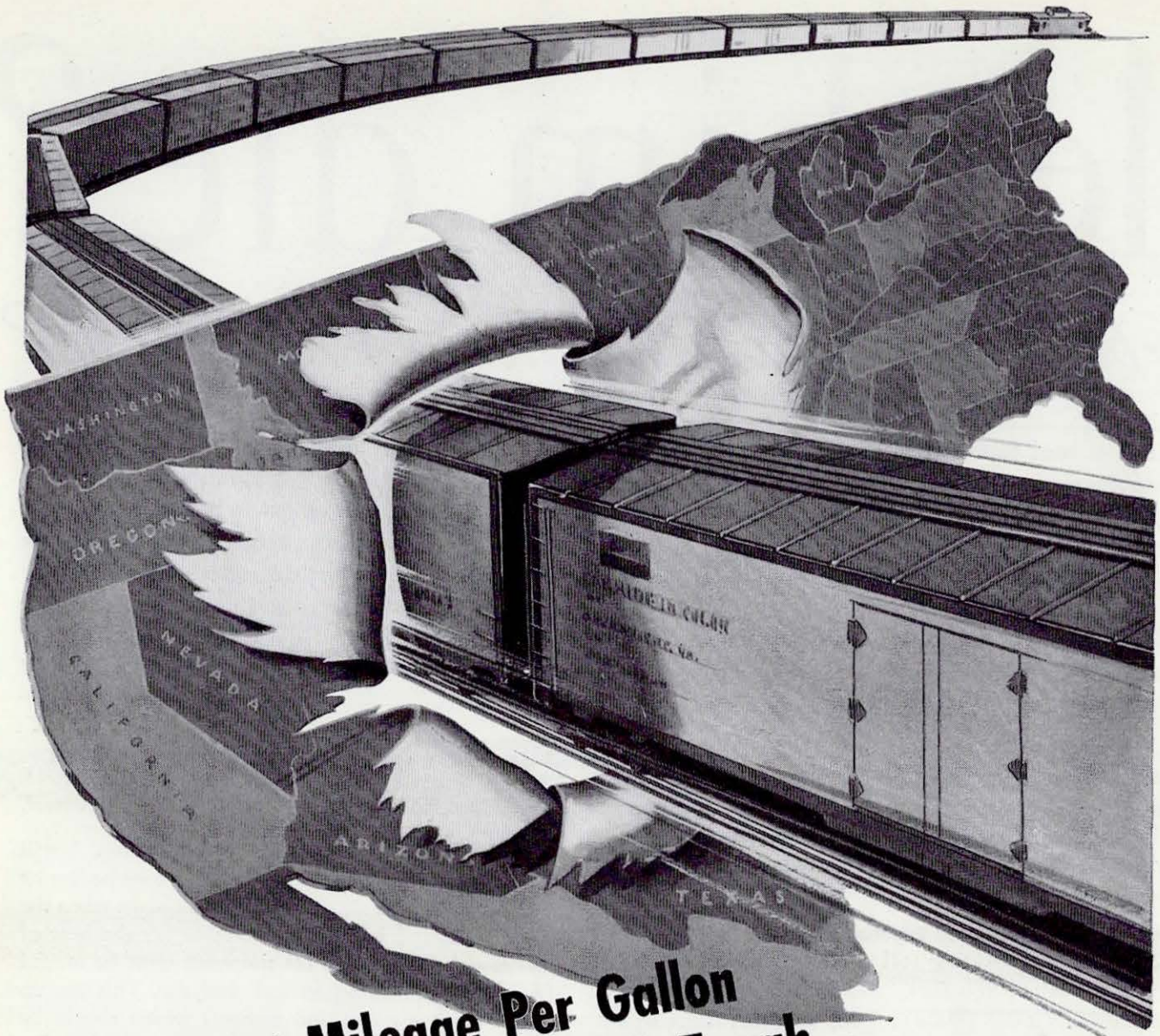
REPUBLIC STEEL CORPORATION

Alloy Steel Division Sales Offices: Massillon, Ohio • General Offices: Cleveland, Ohio

Berger Manufacturing Division • Culvert Division • Niles Steel Products Division • Steel and Tubes Division
Union Drawn Steel Division • Truscon Steel Company • Export Department: Chrysler Building, New York, New York

In Cooperation with the U. S. Government's Salvage Campaign

Poster size reprints of this advertisement are available for your bulletin boards. Write for them.



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PITTSBURGH PLATE GLASS COMPANY

Industrial Paint Division • Pittsburgh, Pa.

Factories: Milwaukee, Wis.; Newark, N. J.; Houston, Texas; Los Angeles, Calif.; Portland, Ore.

The Thresher Varnish Company, Dayton, Ohio

PITTSBURGH PAINTS

RAILWAY FINISHES

Smooth as Glass

on Bridges

Oxy-Acetylene Pressure-Welded Rail Reduces Impact and Eliminates Joint Maintenance

• When rail on bridges is joined by oxy-acetylene pressure-welding, a smooth-riding surface is provided that substantially reduces impact. Welds produced by this Oxweld method have superior strength without any added essential materials being required in their making. Since a continuous track is provided, rail-end batter and the necessity for joint maintenance are completely eliminated. For these reasons, pressure-welded rail is particularly well suited for railroad bridges of all types. It also is effecting economies in many *road crossings, tunnels, station platforms* and *overhead structures,* and in *open track.* The method, and the equipment required to apply it, are made available to the railroads by Oxweld Railroad Service.

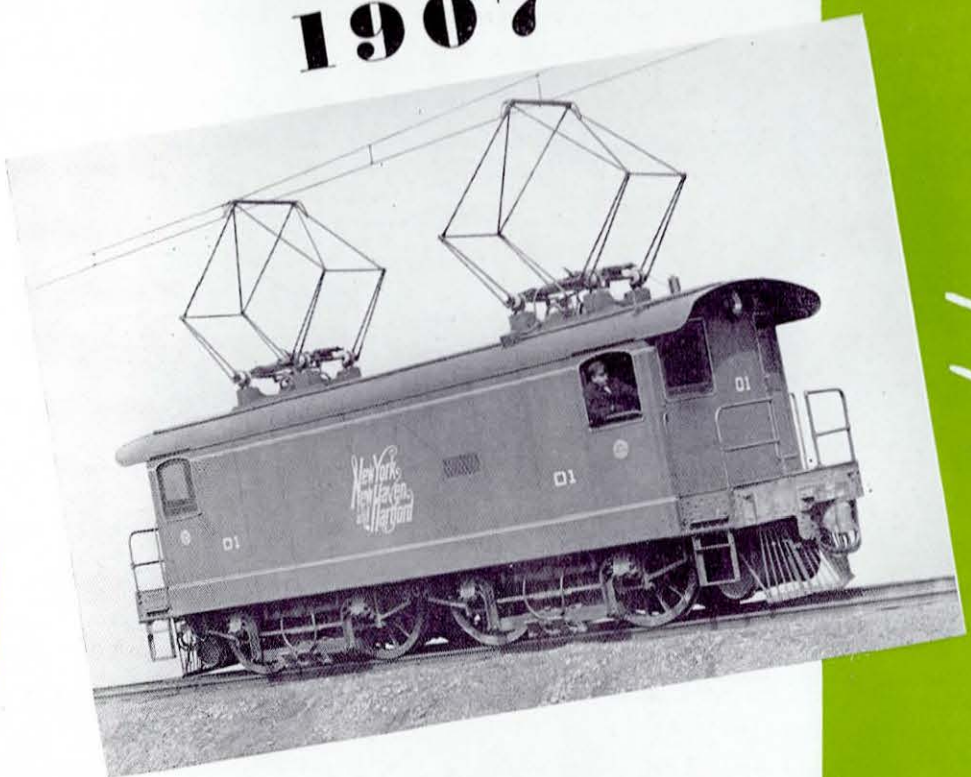
THE OXWELD RAILROAD SERVICE COMPANY
Unit of Union Carbide and Carbon Corporation

UCC

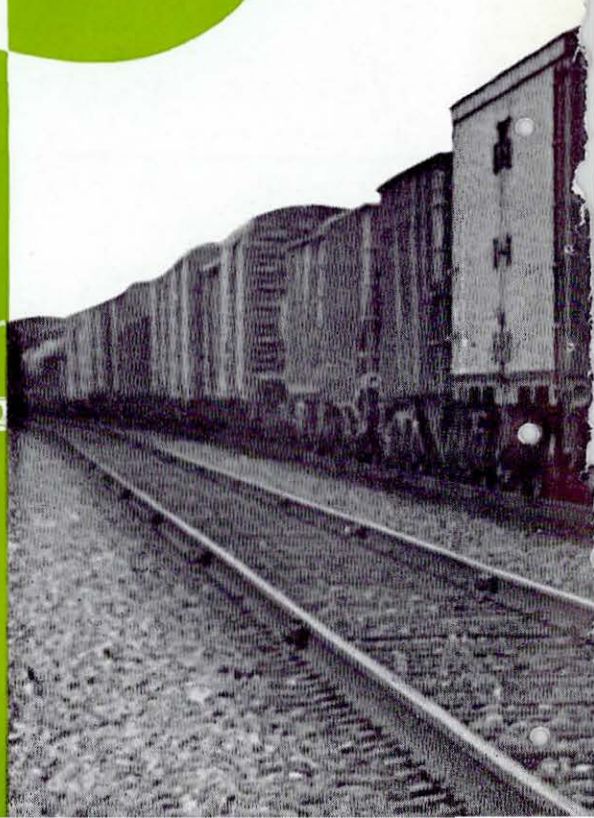
Carbide and Carbon Building — Chicago and New York

35 YEARS OF

1907



1912



ELECTRIFICATION ON THE NEW HAVEN

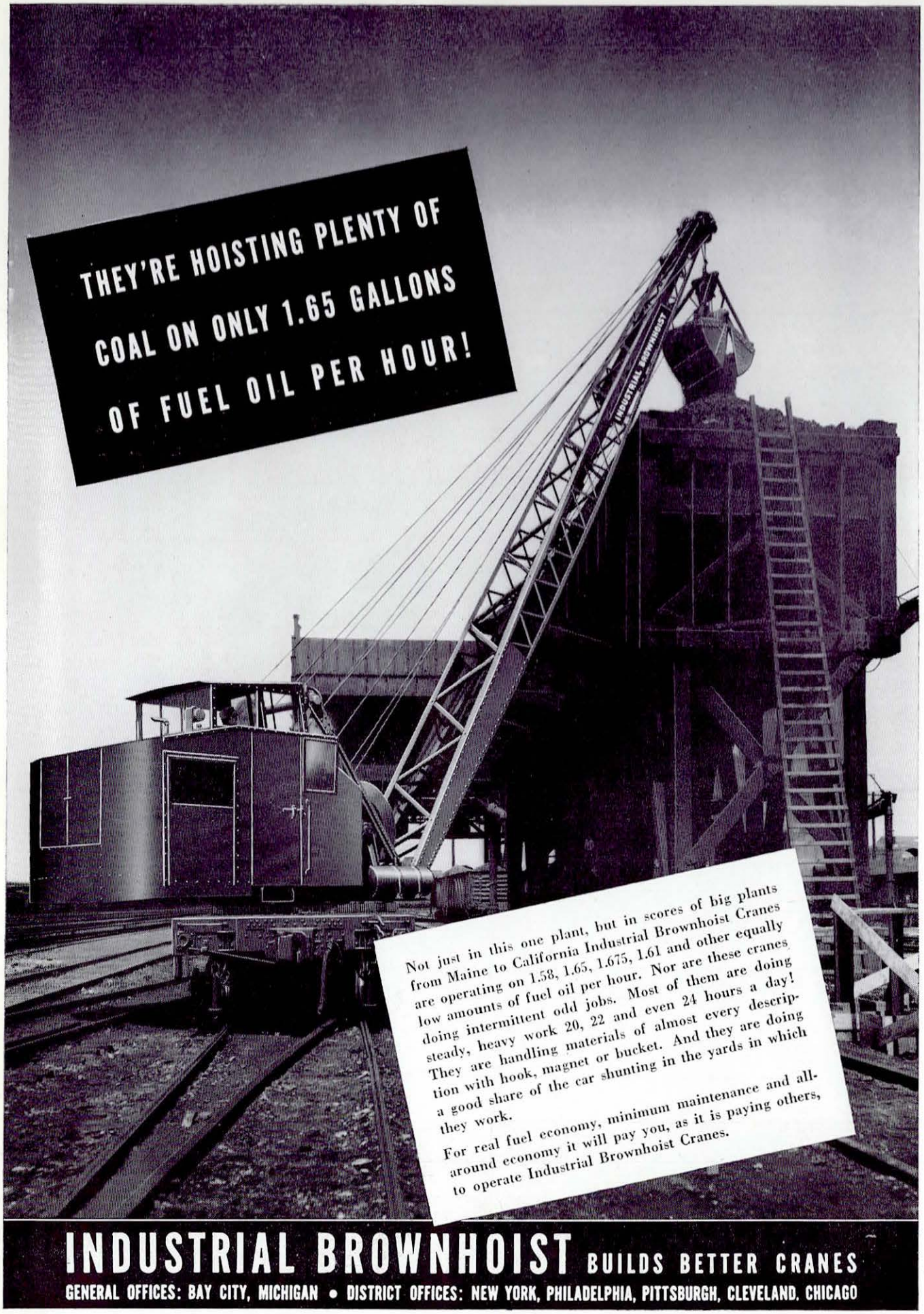
In 1907, when the New York, New Haven and Hartford Railroad inaugurated the first extensive railroad electrification in the United States, its first electric locomotives were products of Baldwin-Westinghouse.

Since that date, dozens of additional Baldwin-Westinghouse locomotives have been added to keep pace with the ever increasing scope and importance of New Haven electrified service—locomotives which have stood the test of time.

The latest addition to New Haven electric equipment comprises five powerful Baldwin-Westinghouse locomotives, of 4-6-6-4 type, now going into freight service to help with the record-breaking task of moving the materials needed by a Nation at war.

In the production of locomotives of all types, military tanks, guns, ship propellers and equipment for other vital industries—

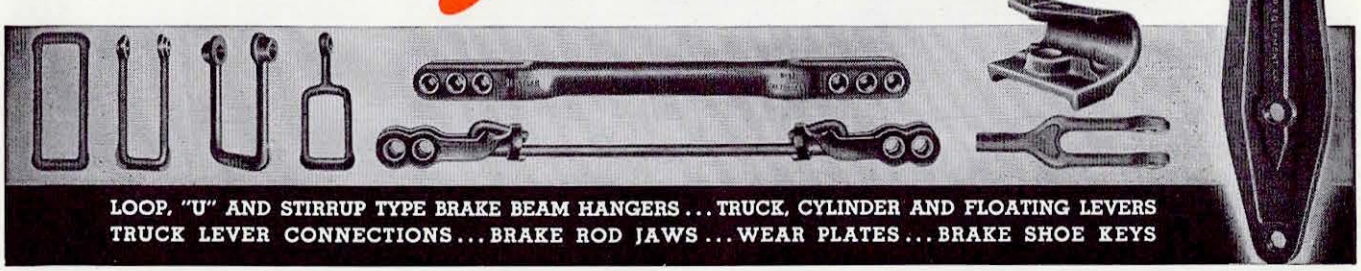
Baldwin Serves the Nation which the Railroads helped to build


THEY'RE HOISTING PLENTY OF
COAL ON ONLY 1.65 GALLONS
OF FUEL OIL PER HOUR!
INDUSTRIAL BROWNHOIST
Not just in this one plant, but in scores of big plants from Maine to California Industrial Brownhoist Cranes are operating on 1.58, 1.65, 1.675, 1.61 and other equally low amounts of fuel oil per hour. Nor are these cranes doing intermittent odd jobs. Most of them are doing steady, heavy work 20, 22 and even 24 hours a day! They are handling materials of almost every description with hook, magnet or bucket. And they are doing a good share of the car shunting in the yards in which they work.
For real fuel economy, minimum maintenance and all-around economy it will pay you, as it is paying others, to operate Industrial Brownhoist Cranes.
INDUSTRIAL BROWNHOIST BUILDS BETTER CRANES
GENERAL OFFICES: BAY CITY, MICHIGAN • DISTRICT OFFICES: NEW YORK, PHILADELPHIA, PITTSBURGH, CLEVELAND, CHICAGO

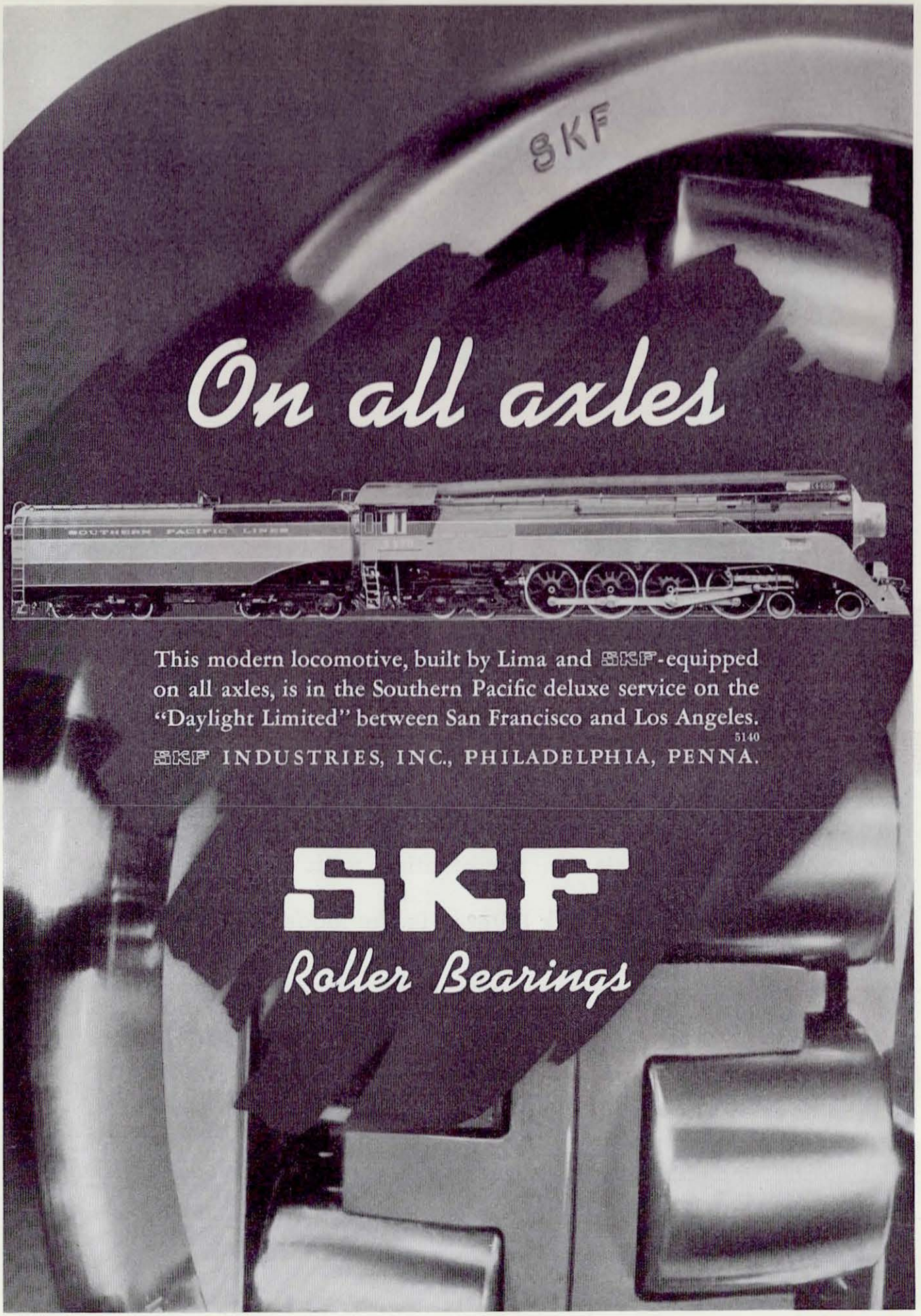
On new *Freight* equipment, Schaefer connections through the bolster in combination with Schaefer loop hangers and truck levers – is *the modern way.*

Schaefer EQUIPMENT COMPANY

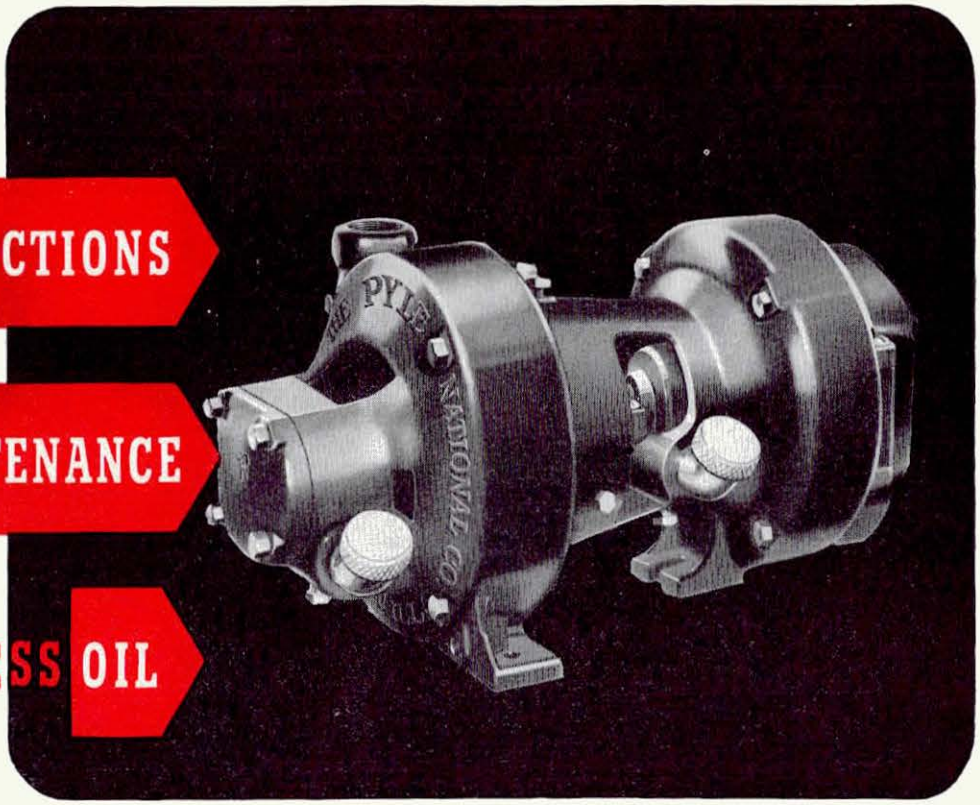
KOPPERS BUILDING • PITTSBURGH, PA.



LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS ... TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS ... BRAKE ROD JAWS ... WEAR PLATES ... BRAKE SHOE KEYS


SKF
On all axles
SOUTHERN PACIFIC LINES
5114
This modern locomotive, built by Lima and SKF-equipped on all axles, is in the Southern Pacific deluxe service on the "Daylight Limited" between San Francisco and Los Angeles.
5140
SKF INDUSTRIES, INC., PHILADELPHIA, PENNA.
SKF
Roller Bearings

FEWER INSPECTIONS
LESS MAINTENANCE
LESS OIL



THE improved Type K-240 headlighting turbo-generator delivers the reliable locomotive lighting so important under present-day operating conditions, plus what is equally important—direct savings in operating costs. This equipment runs longer between inspections, requires less maintenance, and uses less oil. Simple conversion can bring you this conservation of time, effort, and material. Install the improved Type K-240; or your existing Type K-2 equipments can be readily converted to the modern Type K-240 by application of the improved interchangeable parts. Pyle-National turbo-generators are available in a full range of types, 500 watt to 12,000 watt capacities, for all classes of service. Pyle-National headlight cases, cab lighting fixtures, and wiring equipment allow you to choose from a complete line, adapted to any type of modern motive power.

THE PYLE-NATIONAL COMPANY
1334-58 North Kostner Avenue **Chicago, Illinois**

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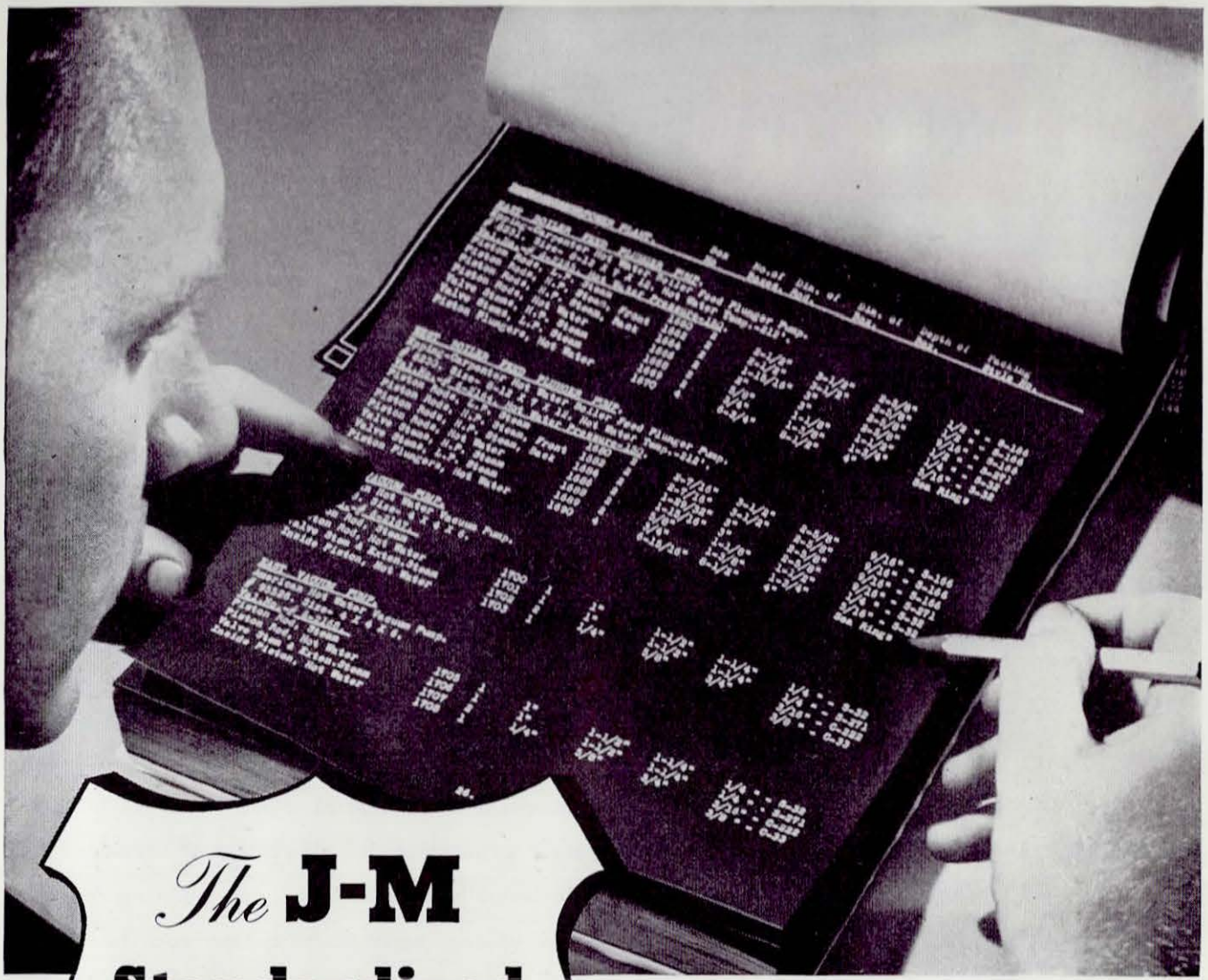

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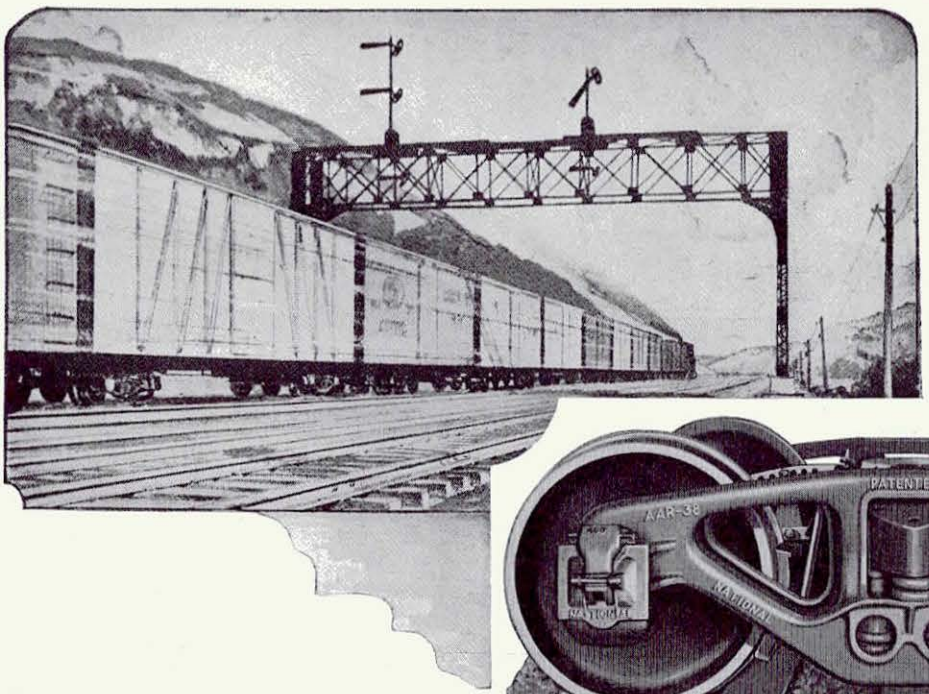

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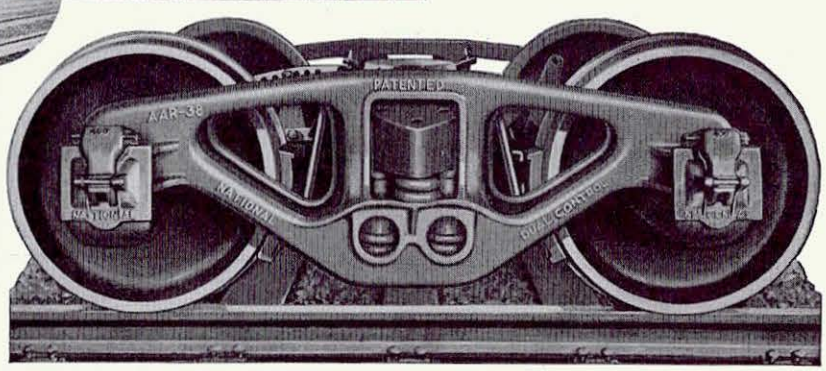

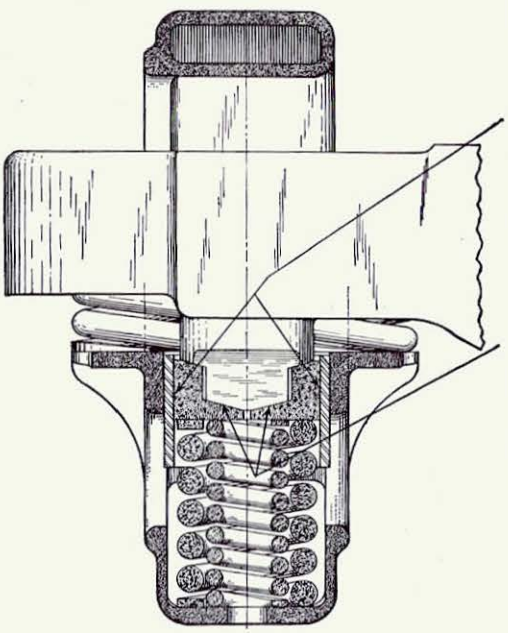

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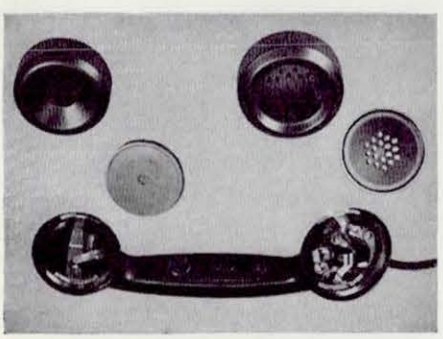

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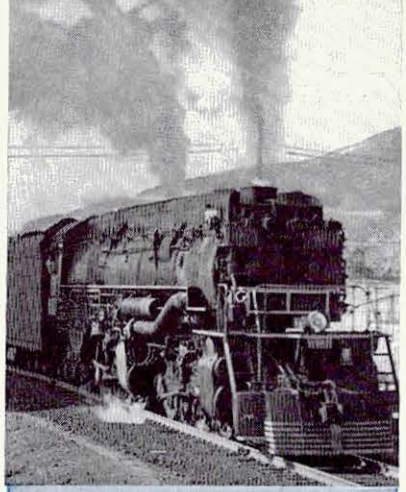

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Railway Age

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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

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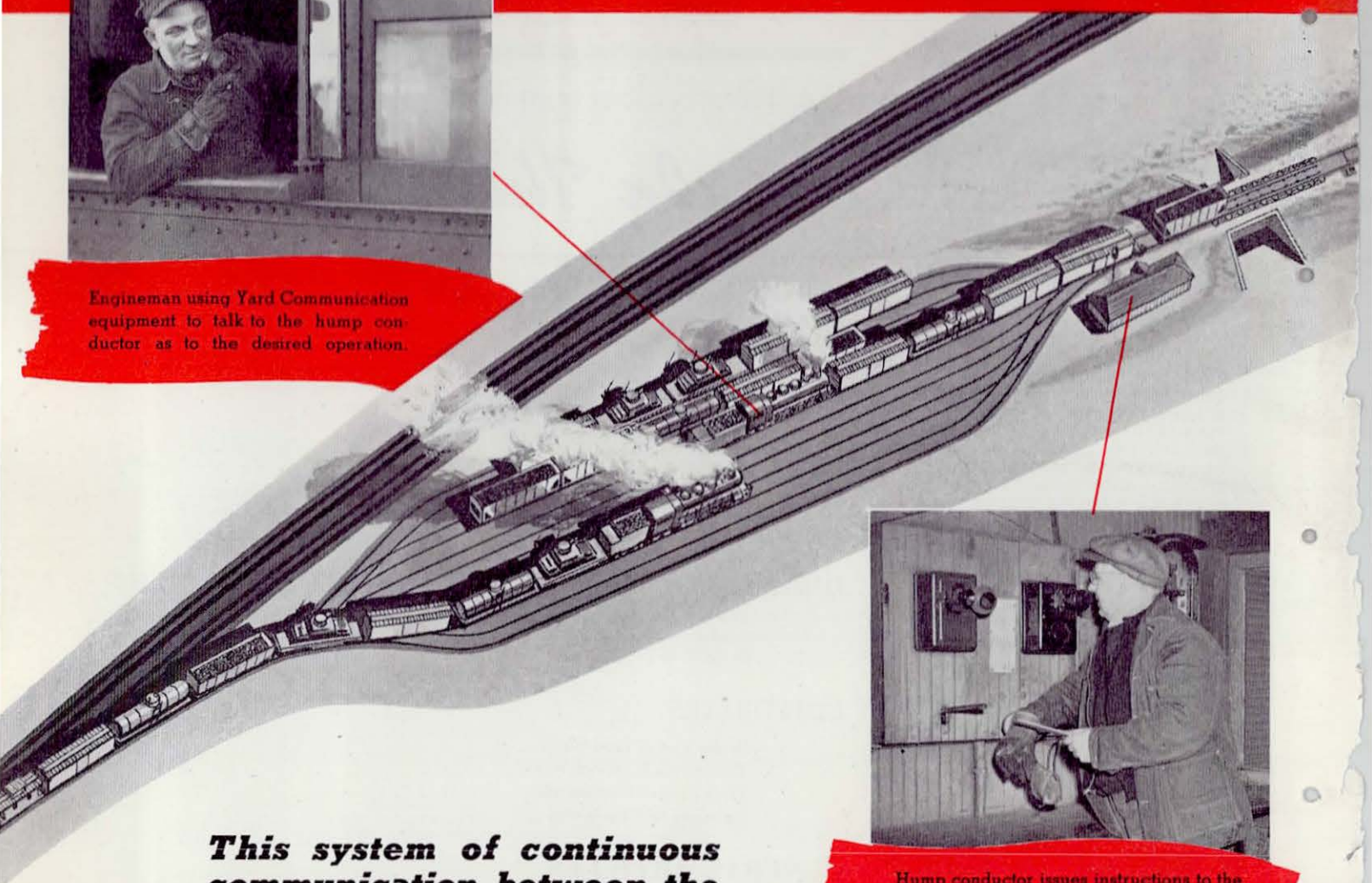
provides a modern tool for better YARD CONTROL!

Engineman using Yard Communication equipment to talk to the hump conductor as to the desired operation.



Hump conductor issues instructions to the crew of the hump or yard engine over the "Union" Yard Communication System.

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EXPERIENCE with installations on several railroads has demonstrated the usefulness of the "Union" Yard Communication System in meeting modern railroad problems in classification yards. It is particularly effective in overcoming delays caused by interference from physical and weather conditions which may obscure visual signals. Because of the complete instructions which may be conveyed, and the quick response of the engineman to such instructions, humping time per train of cars is greatly reduced.

"Union" Yard Communication is available as either a one-way or two-way system. No licenses or permits are required and the system may be generally used as any private telephone system. See Bulletin 158 for complete details and description of the system.

2074

UNION SWITCH & SIGNAL COMPANY
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The Week at a Glance

TO CONSERVE COAL CARS: Mines are allowed daily cars to the extent of their maximum capacity, plus 75 per cent of their capacity in "no bill" cars. Thus, as the leading editorial in this issue points out, they may make a demand for cars far in excess of the number they intend to load. A specific example is given of Southern Illinois mines—entitled to 1,248 cars daily, plus 938 "no bills"—which mines actually, on September 1, loaded only 810 cars. The editorial suggests—in view of the tight situation in open-top cars and the record the carriers and their customers have established in promoting equipment efficiency by *voluntary co-operation*—that here is a place where further voluntary co-operation is needed, to forestall governmental orders, which, otherwise, would be justifiable.

●

ALMOST UP TO '29: Railroad operating revenues in the 12 months ended with July were only three million dollars shy of the 12 months ended with July, 1929—so the I. C. C.'s Bureau of Economics reminds us in its monthly statement of transportation developments, reviewed in the news pages herein. The July operating ratio this year was less than 59—the best showing of any month since the figures began to be compiled, back in 1911.

●

SECOND LARGEST CUSTOMER: Next to the Army as a patron of (and relier-upon) railroad service comes the Navy. So Rear Admiral William Brent Young explained this week in a radio address, reported in the news pages herein. What is more—the Navy is an exacting customer, because its transportation service "must meet the building schedule of a ship." Despite the magnitude and nicety of its requirements, however, the Admiral reports that he "cannot speak too highly of the job that the railroads are doing for the Navy."

●

WATERWAY "ECONOMY": The partisans of inland waterway development are taking full advantage of the nation's time of travail to advance their selfish interests. More intensive waterways development is urged, both as a war-time maximizer of transportation capacity and as a "make-work" project for the advent of peace. An objective study of the ton-mile costs *to the public* of the country's best-situated waterways system (the Ohio river and tributaries) is presented herein, which sheds great light on the comparative usefulness of these projects. These costs (which do not include operating expenses of boats) are shown to vary from 1½ mills on the Monongahela to a fantastic 37 or 40 cents on other tributaries. Is prosecution of such wasteful projects any way to win the war or provide a prosperous peace?

●

QUESTIONS NEED ANSWERS: One or two segments of the Ohio system of waterways show comparatively low ton-mile costs (for investment, maintenance and taxes), and, hence, might find some economic justification. But, even here, where is the justification for putting such costs on the taxpayers, rather than on the direct beneficiaries? And when producers of petroleum, coal and steel ship their goods by river—at important expense to the public—does the said public get the benefit of its largess in lower prices for petroleum, coal and steel; and, if not, why not? Is it necessary to spend hundreds of millions of dollars of public money on waterways merely to "regulate" railroad rates? If so, what about railroad rates in areas where there are no waterways? Does persistent evasion of honest and adequate answers to such questions add to the reputation of this republic's leaders for political integrity or economic sagacity? What does partisanship for uneconomic and toll-free waterways by business leaders, alleged friends of free enterprise, reveal regarding their intelligence and/or intellectual honesty?

●

HIGH TRUCK MINIMA OUT: For some time truck operators have been setting rates on a basis of minimum quantities based—not on truck capacity but on railroad *carload* minima. Now, however, the I. C. C. has struck down a 30,000-lb. truck minimum on rugs and matting and announces its intention to view henceforth with a critical eye all truck rates which set minima at more than the capacity of a single truck.

●

TRAINMEN'S HOURS: An instance is reported in the editorial pages herein of a passenger flagman who got in 21 runs in 11 days, and the question is raised as to whether the money alone is sufficient incentive to keep a man working cheerfully to this intensity. I. C. C. figures are cited, however, which indicate that the instance given is certainly not an average one. Trainmen and enginemen are still, on the average, working much shorter hours than in 1929, and are drawing from 20 to 34 per cent more money for their work.

●

BOILER EXPLOSIONS: There has been an increase—not a big one fortunately—in the number of locomotive boiler explosions, and the causes therefor are analyzed in the editorial pages in this issue. Constant inculcating of *habits* of caution seems to be the only certain preventive, and more intensive effort in this direction is suggested as a necessity under present conditions of national reliance on dependable railroad performance.

●

UNIONS BACK EASTMAN: Five railroad union chiefs met last week with Messrs. Beyer and Boatner of the ODT staff and pledged these organizations to co-operate with the ODT and the railroads to relieve the railroad labor shortage. The union executives stressed the desirability of recruiting new men in the 45-55 age bracket, and there was some discussion of the possibilities for union-management co-operation (on the order of the B. & O. plan to this end).

SIGNALS AND THE WAR: The quality and the quantity of signal installations on the railroads is far advanced during War II from the War I position. The nature and extent of the improvement is summarized in an editorial herein. What contribution are these facilities making to the better performance of the railroads in this war? To be specific, our editorial cites a 2,000 mile route which had a fair amount of signal equipment in the last war and, today, a considerable quantity of the modern equipment now available. The estimate is made that this route is delivering freight 8 hours faster, with present signals, than would be possible if its installations were still of the War I vintage in type and volume.

●

HEAVY-DUTY ELECTRICS: Electric freight locomotives (easily adaptable to passenger service), capable of handling 5,000 trailing tons at high speed on the exacting run between New York and Cedar Hill (New Haven), are described and illustrated elsewhere in this issue. Freight trains on this district are now hauled by three-unit locomotives, while the new ones are a single unit of 4-6 + 6-4 wheel arrangement, rated at 4,860 hp. at 65 m. p. h. (but actually capable of 9,000 hp. at the driving wheels). The new power will handle 125 cars at 55 m. p. h. (as compared with 39 m. p. h. for the older 3-unit locomotives), and at decidedly lower operating expense.

●

LONG CONCRETE PILING: A double-track bridge renewal project of the Norfolk & Western—in which 256 concrete piles up to 65 ft. long and weighing as much as 14½ tons were driven—is illustrated and described herein. The job was done under traffic—the structure being renewed under one track at a time, while the other carried trains in both directions on a gantlet.

●

TRAFFIC NOT SLIPPING: The now-familiar I. C. C. comparison of actual railroad freight tonnage with the "potential" has now appeared for 1941, and the figures are reviewed in a short article herein. The carriers last year are revealed as having got 84.5 per cent of the traffic they might have had (except for diversion to competition and because of "drying-up" by localization of industry). In 1940 the ratio of actual tonnage to "potential" was less than 80 per cent. As was disclosed in our August 22 and 29 issues, the New Haven has localized these comparisons between actual and "potential" to its own operations—breaking them down by specific commodities.

●

TRUCK RESTRICTIONS: Operators of all commercial highway vehicles have got to go to the ODT and prove the necessity of their operation, getting a certificate therefor—which will specify their maximum mileage and minimum loads. The purpose is to cut out all the unnecessary mileage of commercial vehicles, to save gas and rubber.

Transportation — VITAL TO VICTORY.

GENERAL MOTORS LOCOMOTIVES

We Must "Keep 'Em Rolling"

WE repeat again that this war will be decided by the combined fighting forces on land, on sea and in the air . . . But of all the indispensable parts of the war effort, ***transportation*** is one of the most far-reaching. It enters every stage of production from the time the raw materials leave the ground until the finished product reaches its destination. Without ***transportation,*** our fighting forces, war materials and the great army of men and women in our war production plants, would be useless . . . More than 125 General Motors Diesel Freight Locomotive Units now in service are providing faster schedules, greater tonnage-hauling capacity, higher availability, with marked reductions in operating costs . . . And we are still building them as directed by the War Production Board.

Electro-Motive, like the other 90-odd plants of General Motors, is working 24 hours a day producing more for VICTORY because —

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RAILWAY AGE

Better Use of Coal Cars

The country is on the verge of a nominal or real shortage of open top cars; and, in spite of the co-operation of most shippers with the railways, this is partly due to some misuse of cars at coal mines. The Association of American Railroads recently has reduced the "no-bill" cars a mine may have from 100 per cent to 75 per cent of its rated capacity. This paper desires only to help stimulate co-operation between shippers and railways; but it believes that much more than literal observance of this new rule is needed.

The rating of a mine is based on its highest average production in a specified number of days within some previous period—for example, on its highest average production in four days within the previous thirty days. If its rating is thus made 100 cars a day, it can subsequently produce less than this 100 carloads a day, and yet be entitled to demand 100 cars a day for *loading*.

In addition, each mine is entitled under the revised rule to have "no-bill" cars equivalent to 75 per cent of its rating. A "no-bill" car is one still standing at the mine after being loaded, because no market has been secured for the coal it contains. Therefore, even under the new rule, the operator of a mine with a rating of 100 cars daily may keep 75 "no-bill" cars, *on which he pays no demurrage*, standing loaded at his mine, and demand 100 additional cars daily for loading. And if he accumulate *more* than 75 "no-bills," he can avoid billing the additional cars by putting part of them on demurrage—with 24 hours "free time"—sending part of them to his processing plant, and resorting to other devices that will enable him for periods of days to have on hand two or three times as many cars as his rating entitles him to have.

Efficiency FOR VICTORY

These figures are not merely theoretical. The rated daily capacity of the Southern Illinois mines is 1,248 cars. Therefore, under the new rule they are entitled to receive 1,248 cars daily, and have 938 "no-bills"—a total of 2,186 cars. And yet on Tuesday, September 1, they loaded only 810 cars—less than two-thirds of their *daily rating*, and less than one-third of the *total cars* they would be entitled under the new rule to have on hand daily.

The function of freight cars is to *move* freight. Every unnecessary hinderance of their *movement* under present conditions is an economic crime because tending to convert currently reported almost infinitesimal surpluses of open-top cars into nation-wide *nominal* shortages which would be *real* shortages for those who could not get them. Why should the rules continue to give the mines ratings requiring the furnishing of cars often greatly in excess of their actual *average* production? Why should no demurrage be charged on "no-bills," when obviously the charging of demurrage would reduce their detention? Why should mine operators resort to subterfuges for holding more cars than the rules permit, when this not only reduces the supply of cars for moving freight—but also probably is in violation of law?

This paper has advocated nothing but *voluntary co-operation* by shippers with the railways to increase the utilization of cars. Why not, by additional voluntary co-operation, eliminate all rules and practices still hindering maximum practicable *movement* of cars, and thus forestall governmental coercion that otherwise would be justifiable?

Trainmen's Hours of Work

The writer of these lines talked the other day with a young passenger flagman who looked as if he could use a few hours sleep. Although he had been off-duty four days in the first half of August, he had got in 21 runs in eleven days. An extra trainman, nowadays, he said, if he finishes a run with five or six hours of his 16 to spare, stands a good chance of having to go out again. He definitely believed the government should apply restrictive measures to reduce passenger travel.

This instance is probably not typical—but I. C. C. figures do show an increase in the average amount of time train and engine service employees are putting in. The shortage of experienced men in many places, combined with the tremendous increase in traffic, explains why extra mileage and hours have to be worked by the men available.

These men, of course, are paid for their longer hours, and paid handsomely. An accompanying table sets forth the straight time hours and earnings of representative classes of train and engine service employees in May, this year, compared with 1941 and 1929. Similar comparisons are shown of compensation for overtime and "constructive allowances." These figures are *averages;* therefore, do not disclose the really enormous earnings that a trainman or engineman would draw if (as with our flagman) he doubled almost every day. Is high compensation enough to make a man willing to put in such long hours? In the case of our flagman, the answer would seem to be in the negative.

It seems to be a reasonable inference that, where employees are required to work long hours because of the exigencies of the war effort, the maintenance of their willingness to work at such an intensive pace calls for more than the pay-check incentive. They need to have explained to them the intimate connection of their work with the war effort; and to be reminded that, if they are called upon to put in long hours, so also are the men in uniform—and for less money and with more danger.

While cases of long, not to say excessive, hours may be necessary at some points, the table indicates that, on the average at any rate, burdensome demands are not being made on train and engine service employees. The hours they are called upon to put in are, on the average, only slightly longer than in May, a year ago—and are considerably fewer than in May, 1929, a "boom year" of railroad traffic when nobody complained of overwork. In compensation, train and service employees, as the table indicates, are being paid, variously, from 20 per cent to 34 per cent more than in 1929, for hours which average considerably fewer.

Average Hours and Earnings in Representative Train Service Occupation, May, 1942, Compared to 1941 and 1929

	Straight Time Hours in May, 1942	Per Cent Increase or Decrease Compared to May, 1941	Per Cent Increase or Decrease Compared to May, 1929	Straight Time Compensation May, 1941	Per Cent Increase or Decrease Compared to May, 1941	Per Cent Increase or Decrease Compared to May, 1929	Compensation for Overtime and Constructive Allowances in May, 1941	Per Cent Increase Over May, 1941	Per Cent Increase Over May, 1929
Passenger Conductors	166	+2	−11	$304	+13	+21	$22	47	16
Passenger Brakemen	156	+5	−11	223	+19	+30	16	60	45
Through Freight Conductors	195	+9	+1	265	+13	+34	36	50	6
Through Freight Brakemen.	171	+10	−4	192	+17	+33	26	53	8
Passenger Engineers	145	+4	−12	334	+14	+21	25	32	32
Passenger Firemen	134	+3	−15	260	+15	+24	19	46	46
Through Freight Engineers.	181	+5	−1	287	+9	+28	44	42	10
Through Freight Firemen..	163	+8	−4	205	+15	+29	30	50	7

The Curse of Carelessness

Because of the high casualty rates and the great destruction of property they cause, locomotive boiler explosions are still regarded as the most serious class of mechanical failures, even though in number they have lost their old-time impressiveness. It becomes a matter of serious concern when such accidents show a definite upward trend, particularly under circumstances like the present when the utmost in transportation effectiveness is desperately needed.

The annual report of the I. C. C. Bureau of Locomotive Inspection for the fiscal year ended June 30, 1941, recorded 11 boiler explosions caused by low water, which killed 11 and injured 29 persons. For the year ended June, 1942, reports are at hand of 13 explosions which caused the death of 23 persons and the injury of 20. Nine of these, which killed 16 and injured 17, occurred during the second half of the year. Already reports have been received of three more in July which killed two and injured 27.

It is not the increase in the number of accidents and casualties alone which is a matter of concern, but also the spread of the insidious infection of carelessness they evidence—carelessness of the men whose lives are most directly at stake, as well as of those responsible for providing them with locomotives in condition for safe operation. The reports of the 16 boiler explosions which occurred during the 13 months since June 30, 1941, show that improperly functioning water feeding devices, or water-level indicating devices in such condition as to make ready interpretation of their indications difficult, were present in nine cases as contributory causes of the low water. In some of the cases the investigations disclosed that faulty feedwater appliances had been reported repeatedly by the enginemen for considerable periods prior to the ultimate disasters. Had the engine-house foremen had before them cumulative records of

these oft-repeated reports each time work assignments were made on these locomotives, some of the foremen might have been prompted to go to the bottom of trouble evidently not disclosed by routine tests.

But what can be said of explosions in which no contributory causes were apparent? While judgment on this point cannot be final, the presumption is strong that carelessness and lack of decision on the part of the enginemen were the primary causes of these explosions. Indeed, in the cases where there were contributory causes the enginemen were by no means free from responsibility. Failures to take adequate measures to prevent accidents in such cases arise from the callousness of familiarity and from a paralyzing indecision which prevents some men, when suddenly faced with an empty water glass, from promptly taking the action necessary to avert disaster.

Carelessness and callousness are insidious maladies from the tendency toward which no organization can achieve permanent immunity. The only hope of immunity lies in a constant campaign to inculcate habits of safety which make correct action as nearly automatic as human action can be. Certainly, the present is no time to relax efforts having this objective.

Signaling in Two Wars

The extensive installations of signaling facilities that the railroads have made since we entered World War I in April, 1917, are effecting savings in train time which are contributing in no small degree to the success of the railroads in producing many more ton-miles and passenger-miles with shorter over-all schedules than was possible with many more locomotives and cars during 1918.

In April, 1917, the railroads of the United States had 53,800 miles of track equipped with automatic signaling; on December 7, 1941, this total had been increased to 97,361 miles. Also, in the period between the two wars several new systems of signaling were developed and installed extensively. Among these, the automatic train stop, automatic train control or automatic cab signaling was installed on a total of 20,578 miles of tracks, while car retarders with power switches have been installed in 40 classification yards, and centralized traffic control on 2,703 miles of track.

Automatic block signaling not only prevents collisions, but permits following trains to be operated safely at higher average overall speeds with closer spacing, thus increasing the capacity of tracks. Automatic cab signaling contributes further to safety, and aids in on-time train performance. Power switches in C. T. C. territory save about six minutes for an average freight train when entering a siding and from 6 to 10 minutes when departing. Furthermore, the semi-automatic signals in C. T. C. territory, the indications of which authorize train movements and thus dispense with train orders, permit trains to keep moving when otherwise they would be held unnecessarily on sidings. Installations of C. T. C. on busy lines are saving from 0.6 minutes to 1 minute for every freight train mile. Power switch machines and car retarders not only increase the speed at which cars can be classified, but this maximum speed is available at all hours, thus enabling arriving trains to be classified promptly, and in various instances reducing the average time spent by cars passing through yards from 30 to 40 minutes up to an hour or more.

The cumulative effect of these various developments has been estimated for a route of some 2,000 miles between an industrial center and a strategic military point, including portions of four railroads, of which about 300 miles is double track and the remainder single track. On about 300 miles of the single track the automatic signaling has been reconstructed since 1918, and on the remaining 1,700 miles new automatic signaling has been installed. The route includes several centralized traffic control territories totaling about 260 road miles, and cars following this routing pass through three classification yards equipped with retarders. A conservative estimate is that armament moving over this route is now being delivered at destination in at least eight hours less time than would be possible without the signaling facilities installed since 1918. Such an analysis shows how modern signaling is aiding in "Keeping 'Em Rolling" at the speeds for which the locomotives, cars and track are designed.

Indexes to Volume 112

The indexes to the latest volume of the *Railway Age,* January to June, 1942, are now ready for distribution and copies may be had by those subscribers desiring them. Requests should be addressed to the Circulation Department, *Railway Age,* 30 Church Street, New York. Subscribers who have in previous years made application for the index need not apply again; they will continue to receive it as long as they continue to subscribe.

Governmental Power Needs a Curb, Not More Rein

". . . In a modern world states are more easily dominated by force than in the past, because the instruments of force are more easily monopolized by the powerful, and this argues that the power of the state as such must be curbed for the sake of the safety and existence of other states as well as for the sake of the citizen. . . .

"The Twentieth Century war is a war against domination, and the issue is clearer than it was twenty-five years ago, because now big powers begin to realize that their fight is the same as that of the little nations. This is the second round of a battle for an order in which men and states are organized against domination. It flows inevitably out of the first indecisive round because in the very nature of modern society it cannot end until it is won."

Anne O'Hare McCormick in the New York Times.

Electric Locomotives for Freight or Passenger Service

New Haven acquires three high-horsepower single-units, employing momentum-grade operation—Increase speed, reduce operating costs

By Charles Kerr, Jr.

Transportation Application Engineer, Westinghouse Elec. & Mfg. Co.

THE New Haven has placed in service three Westinghouse 11,000-volt a. c. freight locomotives. These units incorporate many new features and represent a radical departure from previous freight power used on this railroad. The locomotives have extremely high capacity, which in some ways exceeds that of any other freight locomotives in this country, and they can be converted readily into high-speed locomotives for interchangeable freight and passenger service whenever the demand arises. They will operate initially in high-speed freight service between the New Haven's terminals at New York (Bay Ridge, Harlem River and Oak Point) and the eastern terminal of the electrification at Cedar Hill Yard in New Haven. The majority of this service consists of scheduled freight, requiring rapid movement over heavily congested track and rigid adherence to schedules to meet connections.

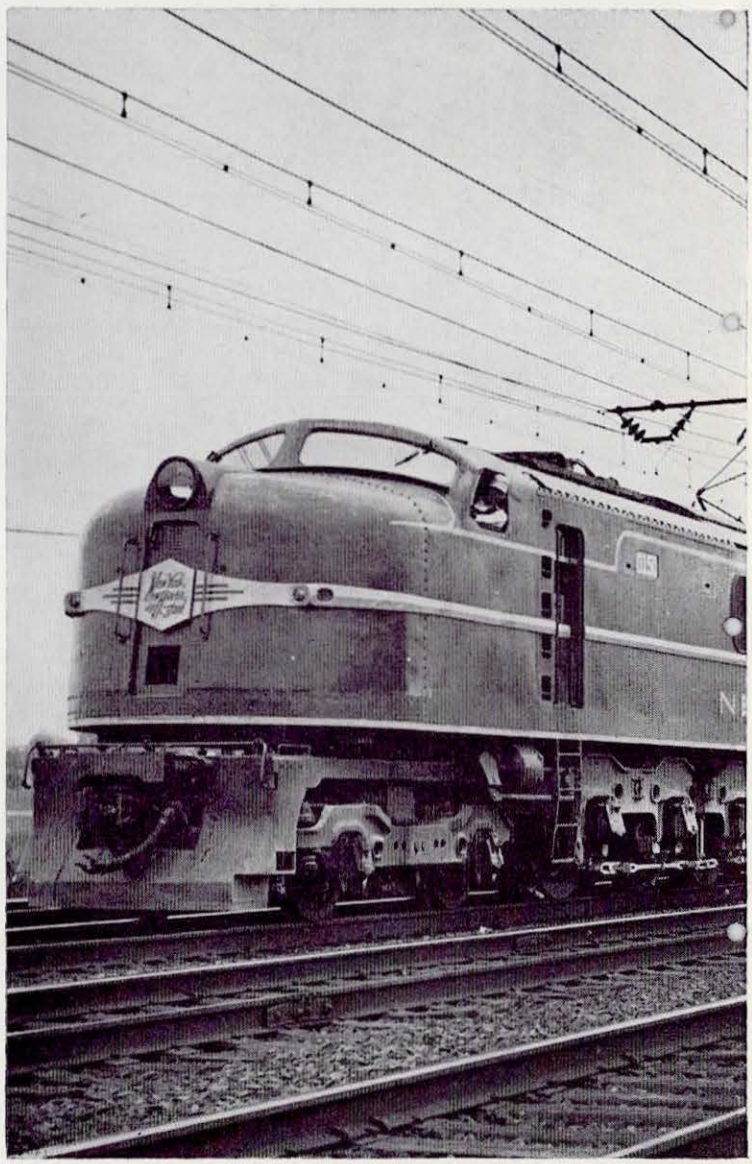
The railroad desired in these new locomotives a single-unit capable of handling a minimum of 5,000 trailing tons. Such trains are now handled by three-cab locomotives (three locomotives operated in multiple unit). Severe weight restrictions are imposed by bridge limitations, and clearance restrictions are rigid for operation through New York tunnels.

These conditions have been met by a 250-ton locomotive with a 4-6+6-4 wheel arrangement, with 360,000 lb. total weight on drivers. The nominal continuous rating of the locomotives is 4,860 hp. at 65 m. p. h., but the locomotives are capable of outputs at the driving wheels up to 9,000 hp.

These locomotives will be used primarily as freight locomotives. For this reason, they are geared for a maximum speed of 65 m. p. h. It is expected that they will be used occasionally in emergency passenger service.

Principal Locomotive Characteristics

Wheel arrangement	4-6+6-4
Weight—Total	500,000 lb.
On drivers	360,000 lb.
Per driving axle	60,000 lb.
On trucks	140,000 lb.
Wheel base—Total	69 ft. 0 in.
Driving	37 ft. 4 in.
Rigid	13 ft. 8 in.
Length over couplers	80 ft. 0 in.
Length, cab	76 ft. 6 in.
Height over locked down pantograph	15 ft. 0 in.
Width, cab	10 ft. 0 in.
Wheel diameter:	
Driving	57 in.
"Guiding"	36 in.
Maximum tractive force—25 per cent adhesion	90,000 lb.
Maximum horsepower	9100
Speed, maximum horsepower	38 m.p.h.
Tractive force—maximum horsepower	90,000 lb.
Continuous hp. at 65 m.p.h.	4,860
Continuous hp. at 39 m.p.h.	4,780

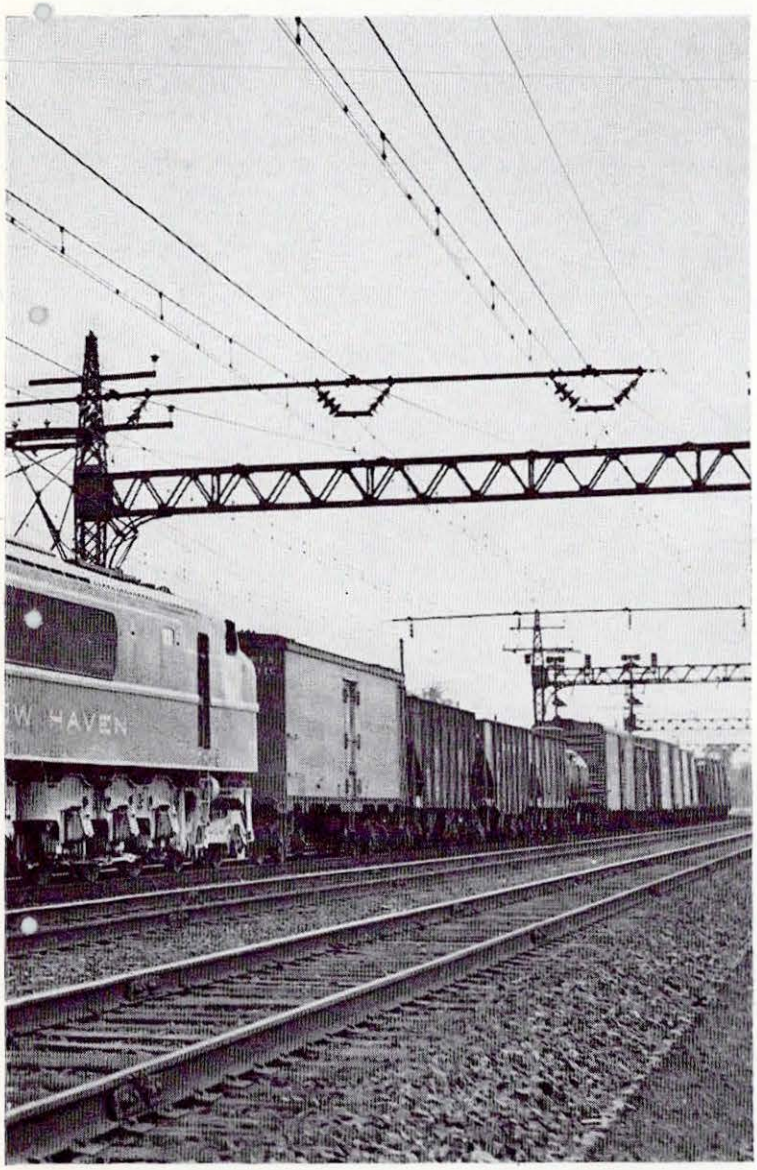


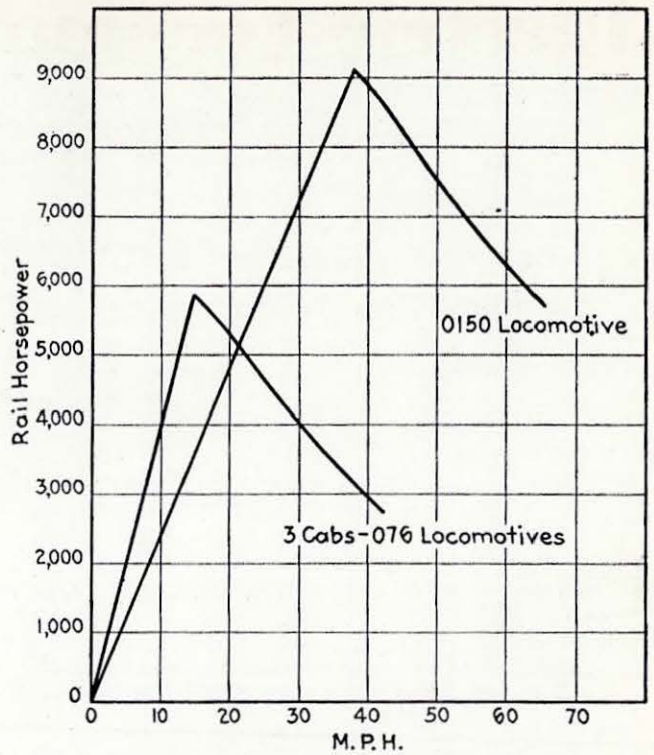
One of the Five New Baldwin-Westinghouse 11,000-Volt A.C. Freight and Passenger Locomotives in Service on the New Haven

in conjunction with existing railroad-owned heating trailers. The mechanical parts are designed for high-speed service, and provision is made for the addition of a heating boiler in the locomotive itself and a change in gearing. The New Haven has a saw-toothed profile in electrified territory, with maximum grades against eastbound traffic of 0.72 per cent. With the weight and clearance restrictions imposed upon the design of the locomotive, it is impossible to design a single-unit locomotive capable of taking 5,000 tons or more over these grades on a purely drag basis. These new locomotives are ideal for this service, as their high horsepower capacity overcomes these grades by momentum with a limited weight on drivers.

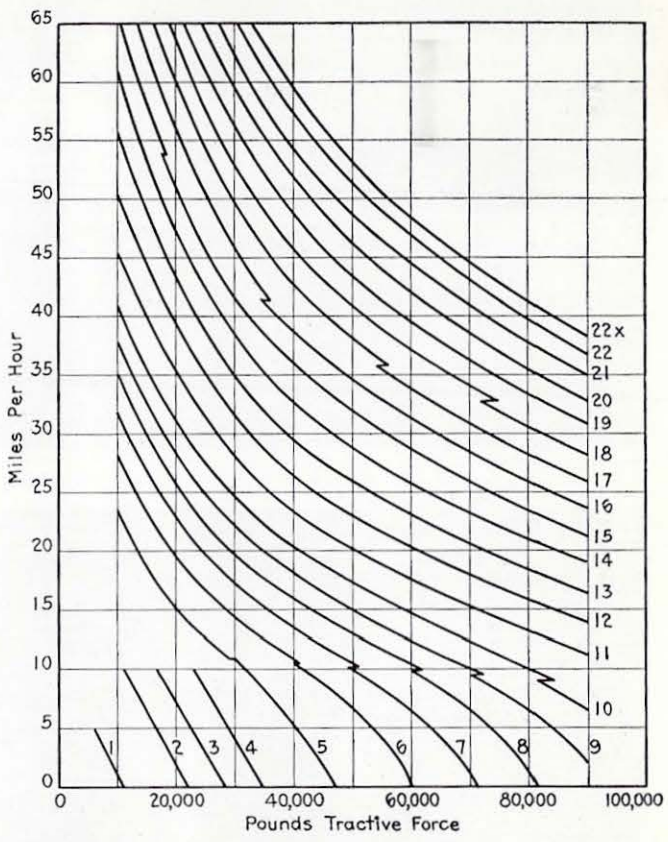
Speed Increased from 39 to 55 M.P.H.

The performance of this locomotive is compared with existing motive power in one of the illustrations. It has been the railroad's practice to use three-cab locomotives, with a total of 522,000 lb. on drivers on 5,000-ton trains, or 45 per cent more weight than is permitted in a single cab with six driving axles. The increased horsepower of the new unit is used to offset the weight restriction. The speed of a 5,000-ton train (125 cars) on level track is raised from approximately 39 m. p. h. to 55 m. p. h.,





ABOVE—Locomotive Horsepower Curve Compared With Existing Motive Power—BELOW—Locomotive Performance Curve Showing 22 Main Running Combinations



or an increase of 41 per cent. A further material operating saving results by reducing the cab miles to one-third of those at present. These locomotives will produce a material improvement in operation which will be accompanied by a decided reduction in operating expenses. Since these locomotives will handle heavy tonnage

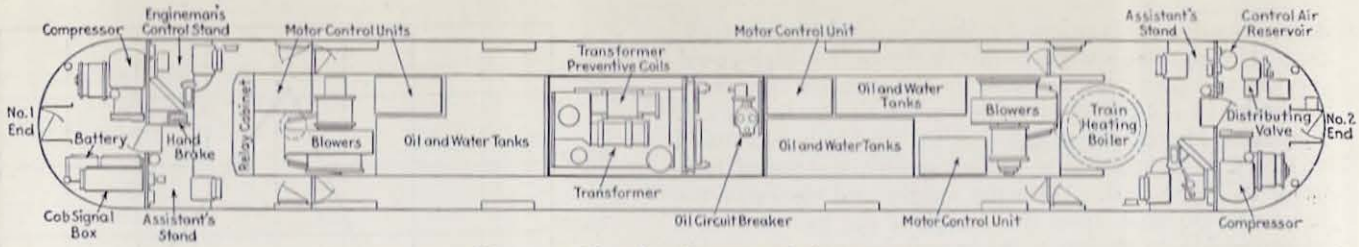
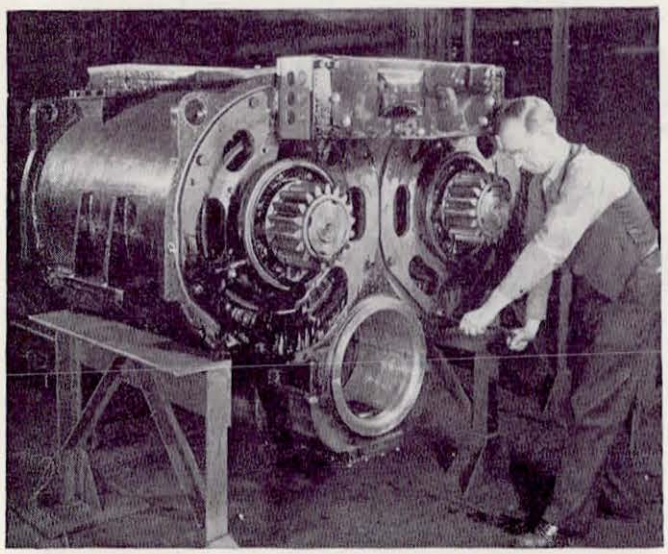


Diagram Showing Layout of Apparatus

in spite of driver weight restrictions, particular attention has been paid to the control to assure smooth operation, thereby reducing driver slippage to a minimum. The tractive force-speed curves show the 22 main running combinations available. These have been spaced to give the minimum change in tractive force between steps, especially at high adhesion values. In addition to these 22 main steps, a so-called "buck-boost" arrangement is incorporated and can be used at the engineman's discretion.

This feature gives two intermediate steps between the adjacent main steps, thus permitting even finer control whenever required by rail conditions. All of these intermediate steps are full running notches.

BELOW—One of the Six Twin Traction Motors Showing the Pinions and Quill Bearings—BOTTOM—Engineer's Control and Brake Stand



For Emergency Passenger Use

It was previously mentioned that these locomotives, even with 65 m. p. h. gearing, would at times be used in emergency passenger service. In spite of the low-speed gearing, these units can handle twenty 85-ton Pullman cars between Pennsylvania Station, New York, and New Haven on any existing schedule. This portion of the New Haven lines has many speed restrictions due to draw-bridges and curves. The high accelerating horsepower of this locomotive more than compensates in this service for the limited maximum speed.

Should it prove desirable at any future date, provision has been made to convert these locomotives to high-speed passenger service by the addition of a heating boiler, water and fuel tanks and by a change in the motor gearing. The running gear is designed for high-speed service. This conversion will not modify the total weight of the locomotive, since ballast is now carried in the space reserved for the train heating equipment.

The general appearance of the locomotives follows modern New Haven practice for streamlined equipment. The general shaping effects an attractive appearance, moves the operator back from the front end and still allows ample space for equipment.

The drawing shows the arrangement of apparatus in the cab. Particular attention has been given to accessibility of all parts for maintenance. This drawing shows the cab with the future train heating equipment, part of which space is now taken by ballast.

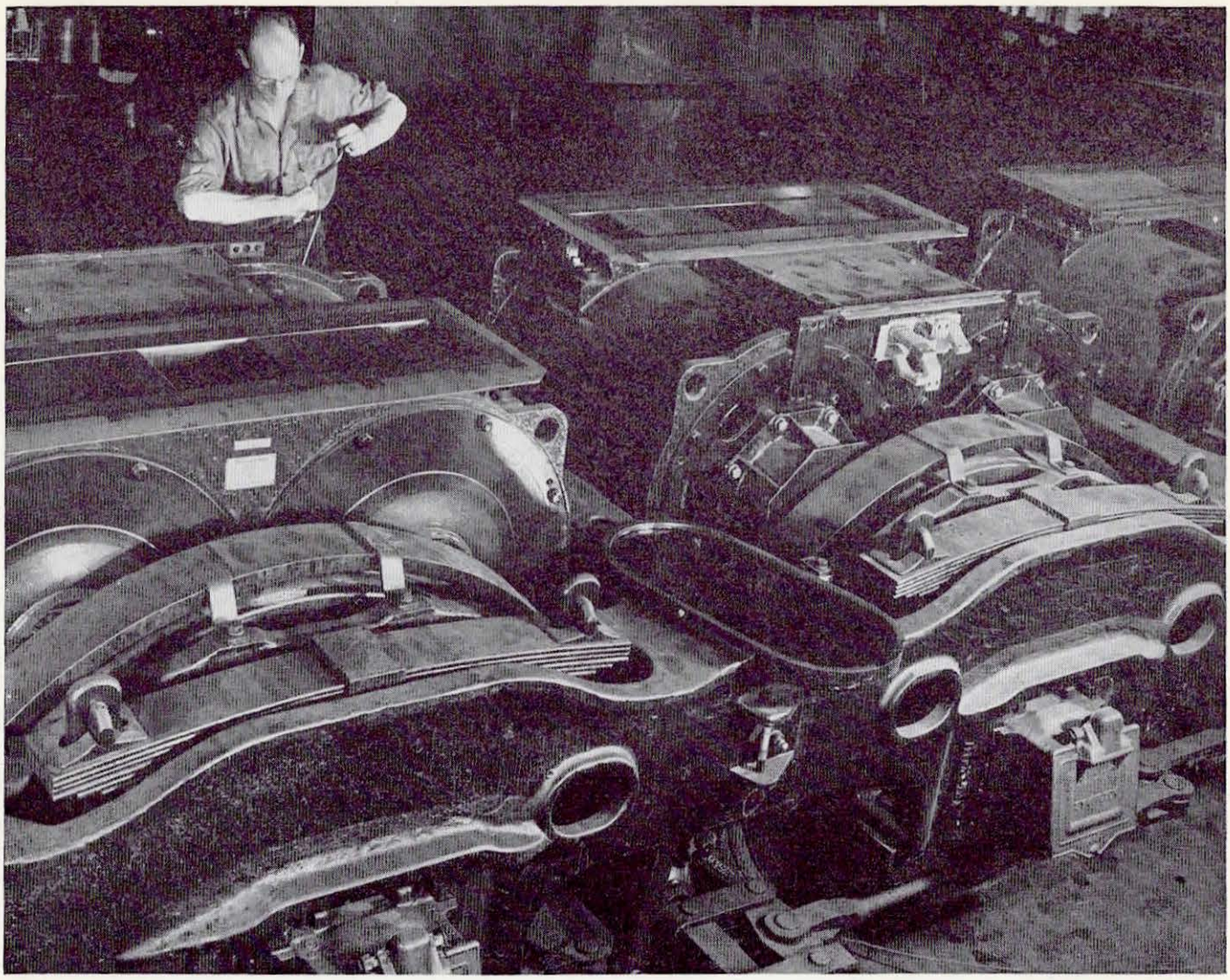
Running Gear

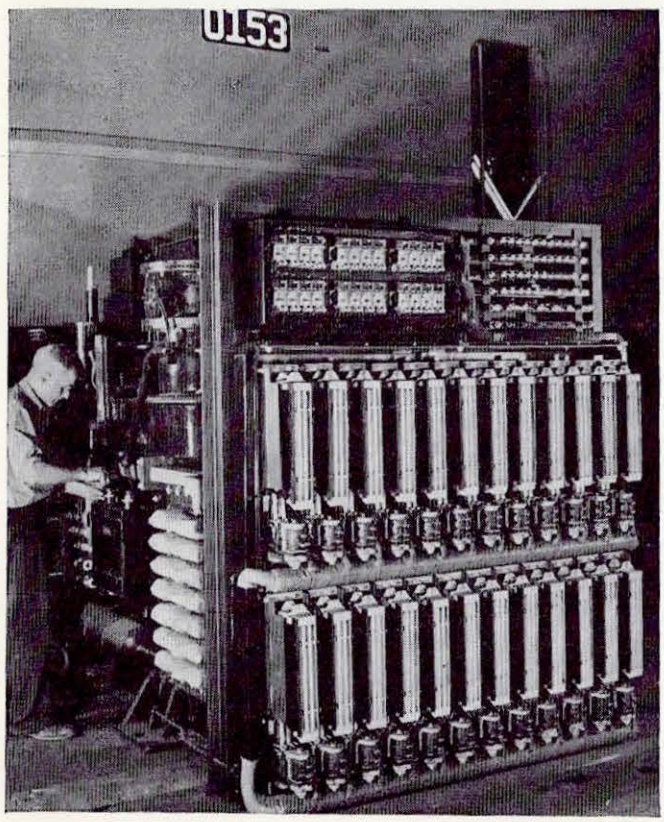
The running gear has a 4-6+6-4 wheel arrangement, the driving wheels being 57 in. in diameter and the guiding truck wheels 36 in. in diameter. The two main trucks are connected by an articulated joint, and the entire drawbar pull of the locomotive is transmitted through the trucks, none through the center pins which carry the cab superstructure.

The main trucks are General Steel integral-cast steel construction. These trucks are identical except for the articulation which is of the ball, socket and pin type arranged with lubricating grooves in the ball for high-pressure lubrication.

A cab restraint mechanism restrains the motion of the cab with respect to the driving trucks. This produces the desired restraint on tangent track, but permits the necessary movement on curves.

The main centerpins which carry the cab structure are located just outside of the leading and trailing drivers, giving a distance between centerpins of 46 ft. 4 in. One centerpin seats in a cylindrical opening in the driving truck frame and restrains the cab in all directions. The other centerpin is also cylindrical, but guided by a rec-





ABOVE—Traction Motors Assembled in the Main Trucks—Openings on Top of Motors Are for Ventilating Air—LEFT—Transformer Assembly Ready To Be Lifted into the Cab

tangular block located in a rectangular opening in the driving truck frame, restraining the lateral motion of the cab but allowing free fore and aft movement. The centerpins are oil lubricated.

The four-wheel guiding trucks have integral cast-steel frames with side frames, transoms, end frames, gussets and pedestals cast as a single unit. There are manganese steel wear plates on the wearing surfaces of the truck frame and bolster. The center plates are fitted with hardened steel liners and are arranged for oil lubrication. As these locomotives are designed for excellent tracking qualities at high speed, the truck bolsters carry lateral restraint rockers with variable resistance, starting at 27½ per cent crack-off, increasing to 32½ per cent at 1½-in. track swing, then dropping to 17 per cent for full track swing. Also, a radius bar prevents swivelling of the guiding trucks.

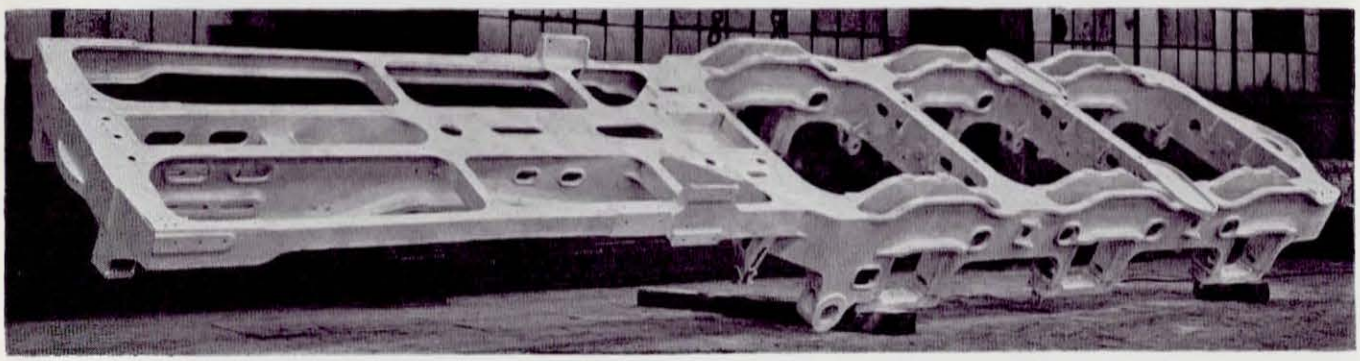
Each driving wheel is 57 in. in diameter, with 4-in. thick tires. All drivers are flanged, this being permitted by the short rigid wheel base, 13 ft. 8 in. The axles are carbon vanadium steel, 11¼ in. in diameter at the wheel fits, and have 11 x 14-in. journals. Bearings are arranged for oil and waste lubrication, and the hub liners for Alemite lubrication.

Each main driving frame is supported on a 3-point

equalization system. The three driving axles in each main driving truck connected together on each side form two points. The third point is the engine truck centerpin. The spring system consists of coil springs over the journal boxes in combination with semi-elliptic springs. All equalization pins have Alemite fittings.

The foundation brake rigging is the equalized type outside hung with one flanged brake shoe on each driving wheel. The brake cylinders are attached to the outside of the main driving truck frames. The guiding truck brakes are of the clasp type. The overall braking force is 70-75 per cent of the entire locomotive weight based upon 50-lb. cylinder pressure.

Extensive tests and millions of miles of operating experience have indicated the thorough suitability of this arrangement of running gear for electric locomotives at all speeds up to 100 m. p. h. and for both passenger and freight service.



One of the Articulated Driving-Truck Beds of a N. Y., N. H. & H. 4-6-6-4 Type Electric Locomotive

Cab Structure

The cab is a truss structure, in which the underframe is reinforced by two outside trusses that extend the full length between centerpins. By placing these truss members along the outside of the cab structure, maximum space is attained for the location of equipment. The cab weight is carried on the two main centerpins and four spring loading pads located between numbers 2 and 3, and 4 and 5 driving axles. These spring pads slide on oil-lubricated surfaces on the truck frames.

The cab underframe is a built-up structure, entirely welded. The truss structures are welded, and in turn welded to the underframe. The side sheets are welded together, then ground smooth. The welded end hoods are bolted in place to permit ease in maintenance, installation and removal of equipment mounted in the hoods. The headlights are located in the hoods directly above the end doors, and the marker lights on the sides of the hoods.

The roof structure includes three hatches, two of which carry the pantographs and the third one being over the transformer compartment. These hatches rest on heavy rubber gaskets, making a water-tight seal. The streamlining, location of windows and similar details follow practices which have been standard on the New Haven for some time.

The hoods are separated from the engineman's compartment by a bulkhead. Doors in the ends of the locomotive and the bulkhead permit entrance to the compartment. The apparatus compartment is similarly separated from the engineman's compartments by bulkheads, and may be entered at either end and on either side. The apparatus deck, extending down the center of the locomotive from bulkhead to bulkhead is approximately 12 in. above the aisle floor height. Air for ventilation of the equipment enters through grills located at the center of the locomotive on each side. Drains at the inside floor level discharge water or snow drawn in through the grilles.

Both the engineman's and the fireman's locations have window wipers and defrosters. Each operating cab is heated by electric heaters with a capacity of 9,000 watts per compartment. The circuits are arranged for ⅓, ⅔ and full heat. The engineer's and helper's seats are on a slightly raised platform, assuring excellent vision for the crew.

Electrical Equipment

The locomotive is driven by six twin, single-phase, 25-cycle, commutating-pole series motors. These motors are permanently connected with two twins in series to reduce the current values in the control circuits. Each set of two motors has its own control group which includes the necessary field shunts, line switches and reversers.

The main propulsion motors have been designated Westinghouse type 427-N and are geared 18/89 for this application. Each twin motor rates 810 hp. continuously and is suitable for maximum speeds of 1,910 r.p.m. Since the single-phase motor is inherently a low-voltage motor, it has 12 poles, with four brushes per pole. To facilitate inspection and maintenance, the brush holders are mounted on a rocker ring so that the various holders may be rotated to an inspection hole. The most modern improvements in a.c. motor construction are incorporated to give the most reliable performance under the most severe operating conditions.

To reduce the dead weight on the axles to a minimum, these motors are spring mounted on the main truck frames. This results in relative motion between the motor and the axle which it drives. To transmit the torque of the motor to the axle, the Westinghouse cup drive is used. This type of drive had its early development on the New Haven many years ago, and since then has been almost universal on American locomotives where individual axle drive is employed with spring borne motors. On these locomotives the six cups per wheel drive both wheels of each axle.

Each twin motor is supported on the truck frame by a three-point support. On one end of the motor, the two supporting feet are bolted solidly to the frame by means of keys. The third point of support on the opposite end is a sliding pad, which allows the motor to expand longitudinally.

Locomotive horsepower capacity is being continually increased, but this increase is delivered without any increase in weight or space. As these capacities climb upward, the problem of ventilating air for the apparatus becomes more acute. On these locomotives approximately 50,000 c.f.m. are required for the motors, transformers and control.

Ventilating Air

This air should be clean and free from snow or rain. Two blowers are located in the cab, each being equipped with a special air cleaning feature. Air is brought into the cab through louvers, one on each side. It is distributed to the various apparatus through ducts located under the cab floor. As the motors swing with the cab on curves, flexible connections from the ducts to the motors are essential. This connection is made through the so-called "high hat." The motor air intake has a telescoping top which is held against the ducts by spring pressure, and when the trucks swivel, this telescoping top slides on the under surface of the duct.

The heart of the control system is the transformer unit placed in a separate compartment in the center of the cab. The entire apparatus for the transformer is assembled and mounted in the shop prior to its location in the locomotive. The transformer assembly includes the main transformer itself, the preventive coils, the buckboost transformer, the notching switches, the sequence relays and allied apparatus. This entire assembly weighs approximately 40,000 lb. Inerteen-filled transformers assure the advantages of liquid-filled units but eliminate the fire hazards incident to oil.

Locomotive Controllers

The locomotive is controlled from either of two master controllers, one in each operator's compartment. The main operating handle has 22 steps which gives smooth control of the locomotive under normal rail conditions. Additional steps can be obtained by moving the main handle up, then down. This action divides each main notch into three. So-called "deadman's control" is included. When this is released, a service application of the brakes is made.

The main control apparatus for each motor circuit is located in three control groups, one for each circuit. To reduce the heavy main wiring each control group is placed in the cab above the group of motors that it serves.

All main circuit apparatus, such as unit switches and reversers, are of the electro-pneumatic type. The auxiliary control for blowers, heaters and compressors is mostly of the electro-magnetic type. All auxiliary control apparatus is grouped into one compartment, affording a centralized point for inspection and maintenance.

All relays are mounted in a dust-proof cabinet in one of the operating compartments. A new feature incorporated in these locomotives is the plug-in type relay. The relays can easily be removed and repaired on a bench instead of on the locomotive. No wires are disconnected, all connections are spring contacts which make or break when the relay is placed in position or removed. The relays protect against: 1, Drivers slipping; 2, overspeeding of an axle; 3, transformer overload or grounding; 4, preventive coil overload; 5, blower overload, and 6, traction motor overload. All relays are equipped with targets which indicate at once which relay has operated.

The operator's compartment is equipped with cab signals, air-brake gages, ammeters showing current in each motor, a speedometer and a group of illuminated panels showing: 1, Main field—low speed; 2, interpole field—high speed; 3, drivers slipping; 4, blower stopped; 5, a.c. primary relay tripped and 6, preventive coil relay tripped.

The current collectors follow established New Haven practice, except that steel parts were substituted where aluminum had formerly been used. This increased the weight, necessitating new and stronger springs for raising the pantographs and holding them against the wire. The range of operation of the pantographs is from 15 ft. 3 in. to 26 ft.

Low-voltage, direct-current for control and battery charging is supplied by two small 1½-kw. generators driven by the blower motors. Thirty-two volt power is used for all control circuits.

The locomotive is equipped with two 100 c.f.m. compressors, one compressor being mounted in each end hood. These compressors are driven by series a.c. motors connected to suitable taps on the main transformer. Westinghouse No. 8 EL brake equipment is used.

The mechanical portion of these locomotives was manufactured by the Baldwin Locomotive Works, the electrical equipment by the Westinghouse Electric & Manufacturing Company and the locomotives assembled in the Westinghouse plant at East Pittsburgh. During their construction it became necessary to substitute certain materials, but this has been accomplished without sacrificing any of the desired features.

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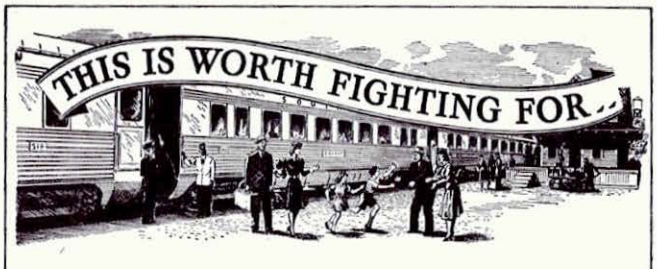


The right to
COME and GO
when we please

THIS is a fight-to-the-finish we are in—a grim war for survival. The stakes are the highest in all the history of mankind. And one of them is the American's traditional right to come and go when he pleases.

Our enemies say that they will erase this birthright of ours; that they'll tell us when we can come and go. But they'll find that it's easier said than done.

No goose-stepping Nazi; no squint-eyed Jap is going to tell Americans that they can't run down to the seashore or vacation in the mountains or take the children to visit Aunt Mary back home. For we are going to win this war!

How? With the bravery and the brilliance of our men in uniform. With the toil and sweat of millions of loyal workers in forest, field, factory and mine. With our genius for invention, organization and production. With the willing sacrifices of every patriotic American.

Yes, we will win this war—even if we have to lay aside for awhile our right to come and go when we please.

That's why the officers and employees of the Southern Railway System have solemnly pledged their all to the winning of the war. That's why our entire transportation plant; all our resources of man-power and experience are enlisted for the duration in the service of the nation. That's why we put the transportation needs of Uncle Sam first—before any and every civilian need—that your right to come and go when you please may be preserved for you and for the generations of Americans yet to come.

In the first seven months of this year we have carried almost 600,000 men in uniform, all moving under orders. They traveled in 24,915 coaches and Pullmans; in 1,564 special trains and 5,563 extra cars attached to our regular passenger trains. And these figures do not include the additional hundreds of thousands who have traveled over our lines on furlough or in small groups on transfer orders.

That's why our trains are often late—troop trains and war freight have the right of way. That's why they are often crowded—so many boys want to visit home at the same time. That's why we have pressed old coaches into service—in our desperate effort to help everyone to come and go when they please. That's why we have had to lower temporarily the standards of service of which we have been so proud. And that's the way we know you want it to be.

Your willing sacrifices of some travel comforts and conveniences are more than a personal contribution to the war effort. They are an inspiration to those of us who railroad to plan for the day when victory comes; to plan for a better Southern Railway System better to "Serve the South". For, with victory, we know that a new day will come to our Southland; a new day of prosperity and happiness and peace; a new day with freedom to come and go when you please.

That is worth fighting for!

Ernest E. Norris
President.

SOUTHERN RAILWAY SYSTEM

THE SOUTHERN SERVES THE SOUTH

Another Message from "Railroads in War"

The Southern adopts a significant theme in inaugurating an intensive institutional advertising program in its territory.

How "Cheap" Is River Transport?

It might save money to the public to shut down some of the Ohio's tributaries and pay railroads for hauling their traffic

By C. Emery Troxel

Assistant Professor of Economics, Wayne University

THE inland waterways, in their improved and modernized form, received much of their impetus in the last war. Some of them were projected or expanded in the feverish rush of war times. The present war threatens again to bring a similar expansion of waterway improvements. For instance, the St. Lawrence Waterway, the Lake Erie-Ohio River Canal and other such projects—each possessing ardent political and commercial supporters—are being earnestly pushed by their partisans, either as allegedly necessary to the defense program, or as desirable "backlogs of public works," to be undertaken as soon as hostilities cease. An examination of previous waterway ventures, therefore, seems pertinent at this time—and especially of the Ohio waterways, because in most respects, the Ohio development is the most completely developed system of improved waterways to be found in the country.

From the time of the launching of Nicholas Roosevelt's *New Orleans* in 1811 there has been steamboating on the Ohio and many of its tributaries. In these 125 years the ebullient and raucous commercialism of the days of the Mike Fink type of rowdy has evolved into the complacency and sluggishness of the barge-traffic era. Once private funds were put into river improvements, but now, as for many other rivers, only the federal government is "investing"; and these changes of the river seem to be more expensive as the decades pass. Where in another time the rivermen railed at the owners of the Portland Canal and still paid their tolls, there are now many dams and locks and clean channels without a charge for their use.

Table I—Investment Cost of Ohio Waterway Projects—July, 1940, Report

(Improvements in place for more than 50 years are omitted)

River	Cost	Some Explanatory Notes
Ohio	$122,958,241	49 dams; cost of replaced locks and dams omitted.
Kanawha	24,455,000	All four dams were finished in the thirties.
Allegheny	17,271,590	All dams finished since 1926.
Monongahela	13,171,161	No dam finished earlier than 1897 is included.
Cumberland	7,939,973	Only two of 14 dams were finished as early as 1904.
Kentucky	2,916,887	For 9 dams which were finished between 1894 and 1917.
Green*	2,356,543	Three of the omitted dams were built before 1840.
Big Sandy	1,513,697	One dam finished in 1897; two in 1905; two in 1910.
Little Kanawha	167,875	For one dam; other four dams finished by 1874.
Muskingum	143,096	For one dam; 7 of 10 dams completed by 1840.
Rough	72,186	Only one dam which was finished in 1896.
Youghiogheny	.....	Nothing done on proposed project.
Tradewater	.....	Project for channel maintenance.
Tennessee	.....	Omitted because project is incomplete and cost allocations of joint projects are arbitrary or difficult and incomplete.
	$192,966,249	

* Includes the tributaries of the Green River, the Barren and Nolin Rivers.

First, to obtain an approximation of the current costs of the Ohio system of waterways, as these are presented in Tables II and III, an estimate of the presently effective investment in the projects must be secured. Thus, in Table I, there is a statement of what is thought to be the dollars' worth of existing Ohio Waterway improvements. Seeking to avoid overstating rather than understating costs, some of the existing improvements have been omitted, leaving a total sum of about $193,000,000.

The approximate annual cost of operation, as given in Table II, is influenced first by the compromises which were made to avoid inclusion of very old but still usable locks and dams. In Table III, therefore, precise comparisons of separate river improvements cannot be made, e. g., though the ton-mile traffic has recently been about the same on the two streams, the total cost of the Kentucky improvements are about two and one-half times those of the older Muskingum project. Next, the annual depreciation rate, of course, is a crude conjecture, a figure which is borrowed from Dr. Morgan's excellent study of waterways.[1] No separate depreciation allowance is provided for such improvements as dredging and revetments, the expenditures for which are frequently continuous and are often included in maintenance cost. The interest allowance is obviously a current and, therefore, a changeable figure, for it is based on an average of recent yield rates of outstanding long-term U. S. bonds. Finally, if a comparison with railroads' roadway costs is desired, and persons sometimes seek such a comparison, the allowance for taxes as measured by recent railroad tax payments, must be included. The total annual cost of these projects is substantial, being about $13,700,000 if the tax allowance is not included.

Monongahela Has Lowest Costs

The significance of these total costs is better understood if they are converted to ton-mile costs, whereby the tremendous variation in costliness of the branches is more apparent. Only the Monongahela project, being second to the Ohio River in total ton-miles of traffic, is notably economical. Yet the Ohio River improvements, which are responsible for about two-thirds of the total annual cost of the system of waterways, are not remarkably more expensive; and the average ton-mile cost for all parts of the system is about the same as the Ohio River figures. Among the five largest divisions—the Ohio, Kanawha, Monongahela, Allegheny, and Cumberland—the Kanawha, for instance, seems to be about ten times as expensive as the Monongahela and the Allegheny is approximately twenty times as costly. And

[1] Section of Research, Federal Coordinator of Transportation, *Public Aids to Transportation*, v. III, pp. 28-9, 1940.

the lesser streams, where the total cost is often small enough to escape attention, are usually still more expensive. Investments in the branches, not the main stem, are most likely to be unwise.

Of No Use to Agriculture

To be still better equipped to comment on the justifiability of these waterway improvements, one wants to know something about the kind of commodities being carried in connection with this astonishing variety of ton-mile costs. Thus, the tons of traffic in a few of these commodities, the prominent ones, are given attention in Table IV, oil products being included to show the rapid recent growth in their movement. A glance at Table IV reveals that these waterways are used chiefly for the movement of industrial and low-grade commodities, and that, in contrast to other Mississippi Valley waterways, agricultural use is of no significance. Like all waterways (improved and unimproved) much of the traffic is sand, gravel and stone—some of the lowest of low grade commodities. Otherwise, coal and coke are most predominant in shipments, being nearly all the traffic on such rivers as the Monongahela and Kanawha. Oil and oil products are the bulk of the *reported* traffic on the Big Sandy and Little Kanawha, two projects with high ton-mile costs; allowance must be made, however, for the possible failure to report at least sand and gravel movements on these streams. And the Rough River, with a high ton-mile cost, apparently is used almost entirely to move rafted logs! (The writer cannot resist calling attention to the fact that railroad ties constitute a fair proportion of the traffic of some rivers, representing from about 3 per cent to 6 per cent of the traffic of the Tennessee, Cumberland, and Green Rivers in recent years.)

Who Are the Beneficiaries?

In an analysis of public waterway policy, a broader perspective is needed than the one which is to be found in the preceding factual data. Calculation of the benefits and detriments cannot be done simply according to past or prospective expenditures. Perhaps the necessity of a broader approach will be more evident as comment on the beneficiaries and contributors is set down.

It is not apparent that any great gain results from a waterway for sand and gravel traffic, whatever may be the amount of such traffic. Because most of this traffic probably would exist without some or all of the improvements, it seems to deserve little attention.

But the coal mine operators using the waterways certainly gain something from the lower *price* of transportation on, say, the Monongahela, Ohio and Kanawha Rivers. In the coal industry, depressed ever since its excessive expansion of about twenty years ago, at least a part of its operators have recuperated somewhat as a result of either the greater output which follows from lower transportation expenses and lower prices, or, what seems to be more probable, larger profits without a lowering of prices. Perhaps some of the lower expense of water transportation is passed on to coal customers in lower prices, but, if the work of the National Bituminous Coal Commission means anything, the evidence seems to indicate greater profits for coal producers.

The steel plants with access to these improvements, especially those on or near the Ohio River, benefit immensely from these improvements. These improvements often provide cheap transportation of coal and coke for the industry as well as for movement of semi-finished and finished products. Yet, even more than in the case of coal operators, it appears that these advantages are more likely to mean profit increases rather than price reductions for iron and steel buyers. The absence of competitive-pricing practices in the steel industry provides sufficient support for this conclusion.

In a similar manner one may expect oil distributors as well as common water carrers to obtain benefits. But it does not follow that oil-product buyers obtain lower prices when the transportation expense is reduced.

And other enterprises and persons secure benefits, sometimes secondary gains, from the improved waterways. When the waterways are being improved, the communities near the construction site have a temporary boom. Later they derive a similar gain from maintenance and replacement expenditures. In so far as industrial sites are changed, sustenance is given the Pocahontas coal operators and some measure of superiority is provided for the upper Ohio steel area. For a

Waterways—Neither Efficient for War Nor Thrifty in Peace

The Wall Street Journal, in a recent dispatch from Cincinnati, reported that river boats are now "playing their most important role in this country's transportation since the Civil War." In 1940, it was stated, boats on the Mississippi river system handled 23 million tons of petroleum products; in 1941, 27 million tons—and, now, a still larger tonnage.

Low "cost" of transportation is said to be one of the principal reasons for the growth of inland water transportation. But wouldn't *expense to the shipper* be a more accurate term than "cost?"

The author of this article (who has written in these pages before on this subject) is an independent and objective student of waterway developments. He makes clear that actual cost of such transportation is a much different item from *expense to the shipper*. Considering the ton-mile costs of these projects to the federal treasury, it would be more economical to close some of them down and ship their freight by rail at taxpayers' expense.

The facts here presented raise questions as to the effectiveness of waterways (compared to railroads) as a means of maximizing wartime transportation, and of the economic justification for most, if not all, such enterprises at any time.

If this nation wishes to devote its energies, with a minimum of waste, to winning the war —and if it wishes to maximize prosperity in peace-time—persistent avoidance of honest answers to these questions must cease.—*Editor.*

country that is at war there may be one possible benefit for the whole nation from the improved waterway. Perhaps there will be a shortage of transportation facilities in the Upper Ohio area when larger and larger amounts of heavy industrial goods are wanted. The trialists, these waterways may provide disadvantages for other steel, coal and other producers. Has the coal industry been any less depressed because of the Ohio system of waterways? Perhaps the inland coal producers lose what the others gain. And certainly any shift of steel

Table II Approximate Annual Public Cost of Ohio Waterway Projects

(Not Including Operating and Other Expenses Borne by Boat Owners)

River	Maintenance Cost: Aver. 1930-40	Depreciation Cost: Approx. at 1.5%	Interest Cost: Approx. at 2½% 1940	Taxes: Approx. at 1.7% 1940*	Total Cost Without Taxes	Total Cost With Taxes
Ohio	$4,214,478†	$1,843,374	$3,073,956	$2,090,290	$9,132,808	$11,223,808
Kanawha	221,512	366,825	611,375	415,735	1,199,712	1,615,447
Allegheny	251,952	259,074	431,790	293,617	942,816	1,236,433
Monongahela	566,045	197,567	329,279	223,910	1,092,891	1,316,801
Cumberland	246,515	119,100	198,499	134,980	564,114	699,094
Kentucky	178,803	43,753	72,922	49,587	295,478	345,065
Green‡	88,968	35,348	58,914	40,061	183,230	223,291
Big Sandy	32,993	22,705	37,842	25,733	93,540	119,273
Little Kanawha	23,013	2,518	4,197	2,854	29,728	32,582
Muskingum	105,654	2,146	3,577	2,433	111,377	113,810
Rough	2,289	1,083	1,805	1,227	5,177	6,404
Youghiogheny	4,912	.....	.....	.....	4,912	4,912
Tradewater	1,642o	.....	.....	.....	1,642	1,642
Total	$5,938,776	$2,894,493	$4,824,156	$3,280,427	$13,657,425	$16,937,852

* This figure includes social security taxes, and is based upon the railroad valuation of $21,060,000,000, the value used in the 15 per cent case of 1937-38.

† $1,356,802 of this sum represent a 9-year rather than 10-year average of what is called "open channel cost," a separate classification of costs which is given only for the Ohio River. A 9-year average is used because, in 1930 and 1931 when open channel cost was about $300,000 each year, some of the costs may have been included with what the Army Engineers called "new work" on the channel.

‡ Includes tributary rivers, the Barren and Nolin.

o Average for four years; data are not available for 1931 through 1936 and for 1940.

presence of the Ohio Waterways thereby may relieve the pressure on railroads and improve the war effort of the country. Yet this gain would be a sort of windfall for the nation, for these waterways were developed more for peacetime than for wartime use. Such additional transport capacity, granted that it may prove convenient, might have been provided more economically by other means.

Some Profit, But Others Lose

Prominent among the losers are the railroads. There is no evidence of the amount of the reduction in their tonnage because of the Ohio system of waterways; a reduction of the traffic of railroads in this region cannot be as directly connected with the waterways, as the traffic changes of the Illinois Central may be associated with Mississippi Waterway.[2] Still there must be reductions, and they are converted, of course, into smaller purchases, payrolls and employment for railroads.

It is customary for waterway protagonists to acclaim the railroad-rate reductions which follow the opening of a waterway. Though they correctly note the transportation expense reduction for some commodities and companies, they fail to recognize the possibility of contrary consequences elsewhere. Perhaps the rate reductions to meet water competition have the effect of forcing rate increases for commodities or areas where there is less competition. Or, in the event of a continuance of deficit operations, railroads may be forced to abandon parts—the weaker branches—of their systems. Communities near the waterway or elsewhere—for toll-free water transportation may provoke abandonments at inland points—may be compelled to make more expensive (for some goods) use of trucks. These effects may appear slowly, and yet they may be inevitable.

Waterways, not affecting all producers of an industry alike, may have the same effect as a straight subsidy. While a locational advantage may be given to some coal and steel producers and a miscellany of industplants toward "cheap" water transportation and away from inland points would leave behind the social problems accompanying mass unemployment of depressed towns and areas.

And it always must be remembered that other kinds of public improvements may be forestalled when so many dollars are poured into the Ohio system. If one believes that public expenditures cannot be unlimited, expenditures on waterways reduce expenditures for public housing, reforestation or other public projects.

No statement is more difficult and yet so imperative as a summary of desirable public policy in constructing new and maintaining old inland waterways. It includes, among other variables, the issues of where new improvements should be undertaken and how much should be spent on them as well as the collection of tolls from and the extent of maintenance of established projects. The question of protecting the investment value of the assets of other forms of transportation, particularly railroads,

Table III Average Ton-Mile Cost of Ohio Waterway Projects

River	Ton-Mile Cost, Using an 11 Year Average of Ton-Miles (1929-39)		Ton-Mile Cost, Using Largest Ton-Mile Figure of Last 5 Years (1934-39)	
	Without Taxes (Mills)	Including Taxes (Mills)	Without Taxes (Mills)	Including Taxes (Mills)
Ohio	4.0	4.9	2.7‡	3.3‡
Kanawha	11.4	15.3	5.9‡	7.9‡
Allegheny	23.7	31.1	17.8‡	23.4‡
Monongahela	1.5	1.5	0.9‡	1.1‡
Cumberland	14.2	17.5	6.5‡	8.0‡
Kentucky	39.7	46.4	51.0	59.6
Green	10.1	12.7	11.1	13.5
Big Sandy	296.0	377.5	261.3	333.2
Little Kanawha	118.9	130.3	270.3	296.2
Muskingum	23.5	24.0	20.3	20.7
Rough	53.9	66.7	79.7	98.5
Youghiogheny	27.4	27.4	24.2	24.2
Tradewater	100.5†	100.5†	126.3	126.3
All Rivers	4.3	5.4	3.9	5.0

* Ton-Mile average for ten years.

† Ton-Mile average for eight years.

‡ Ton-Mile figure was the largest for any recent year even including the prosperous late twenties.

[2] *Public Aids to Transportation, op. cit.*, p. 114.

is not an easy one to handle. In any case it needs to be emphasized that there is no way of stating absolute rules, even though the above cost and traffic data concerning a long-established system of waterways may reduce the error margin.

Expenditures on and utilization of these waterways must be examined in terms of the resulting national welfare, however broad and elusive the notions of welfare may be. Thus, river and harbor appropriations must not be granted simply because some river towns and interests want them. Nor should railroad management or investors be guaranteed protection of their investment simply because they developed their services first.

Every proposed waterway improvement, whether it involves a new investment or a replacement expenditure and whether it is an extension of an existing development or merely annual maintenance cost, ought to be appraised according to all possible desirable and undesirable social effects. If transportation facilities are inadequate, as they will be during this war, the first inquiry should be about alternative ways of eliminating the shortage. Waterway improvements are not necessarily desirable during a war. They are permanent means of transportation for an impermanent condition. It takes at least a few years to construct them and, thus, the nation may be pouring some very scarce materials into a not-yet-useful project.

Table IV—Division of Traffic According to Four Kinds of Commodities

(Per cent of total tons)

	1930				1935				1939			
	Sand, Gravel, Stone, and Slag	Coal and Coke	Oil and Oil Products	Rolled and unmfd. Iron and Steel	Sand, Gravel, Stone, and Slag	Coal and Coke	Oil and Oil Products	Rolled and unmfd. Iron and Steel	Sand, Gravel, Stone, and Slag	Coal and Coke	Oil and Oil Products	Rolled and unmfd. Iron and Steel
	%	%	%	%	%	%	%	%	%	%	%	%
Ohio	42.7	43.7	2.0	7.3	19.8	61.1	7.7	5.4	21.7	54.7	11.9	5.3
Kanawha	19.7	73.2	3.6	0.02	7.8	86.0	5.6	..	11.1	82.9	5.2	0.03
Allegheny	40.9	51.0	2.9	1.4	43.3	42.2	7.3	2.1	39.9	49.6	6.0	2.5
Monongahela	7.5	85.2	0.06	5.2	3.8	89.8	0.6	3.8	5.5	86.0	1.4	3.6
Cumberland	86.5	0.2	0.04	..	52.0	0.4	20.4	0.6	53.9	0.4	32.2	0.7
Kentucky	7.6*	6.4	50.2*	..	89.6*	4.6	5.4*	..	77.8	6.6	14.8	..
Green, Barren	7.5	24.3	0.04	..	6.4	46.3	1.0	0.6	1.2	0.9	15.2	..
Big Sandy	..	..	93.5	..	..	2.5	89.0	..	..	..	86.2	..
Little Kanawha	72.4*	..	26.2	0.2	..*	..	99.9	..	..*	..	91.7	8.2
Muskingum	62.5	36.4	0.3	0.1	16.2	82.5	1.3	0.03	14.1	84.2	1.4	..
Rough		99.7% rafted logs				76.8% rafted logs				100% rafted logs		
Youghiogheny	26.8	67.7	1.1	4.3	10.2	72.9	11.5	5.5	44.9	45.6	8.2	1.2

* These figures reveal such an astonishing variation in traffic that there seems to be a reason for believing the traffic to be inconsistently, if not inaccurately, reported.

Disadvantages Should Be Weighed

If there is any reduction of transportation expense by means of toll-free projects, this condition must be set against such matters as possible long-pull losses of railroad service for inland as well as river towns. The attractiveness of new and more economical production centers beside the rivers may be fully offset by social difficulties in the old production centers where transportation-cost subsidization is lacking. And there may be a similar reason for denying a depressed industry or a commercially sick community the cheaper but toll-free water transportation; indeed such transportation may merely stay momentarily the inevitable decadence and death. Likewise, these public "investments" ought to "compete" with all other possible ones in seeking the maximum of social betterment. These and other features of the problem serve to emphasize the significance of social balance, a not very evident quality of the planning or operation of the Ohio system.

Though these social concepts have wider implications than simply the question of the cost or expense of transportation, there is, nevertheless, need for special consideration of waterway-railroad conflicts. Keeping our social perspective, waterways should be extended when, considering *all* costs, they are more economical than any other means of transportation. Before a public waterway is approved it should be shown to be *more economical* than rail or motor transportation.

Each increment in a system of waterways should justify itself. Before a new investment is undertaken, i. e., before another stream is improved or before old improvements are replaced or extended, it should be agreed that the increase in cost is at least equalled by the *net social gain*. And, likewise, an established project should be abandoned if annual maintenance cost is greater than the net social loss following abandonment. Or, to put this rule in another way, whether it is a question of a new investment or of justification of an existing improvement, each of the separable parts first must be examined alone.

If railroads can be hired to carry the present or prospective traffic for a lower total cost than a waterway's cost, expenditures on such a waterway may be a complete loss; it might have been cheaper for the government to purchase the railroad service for the shippers.

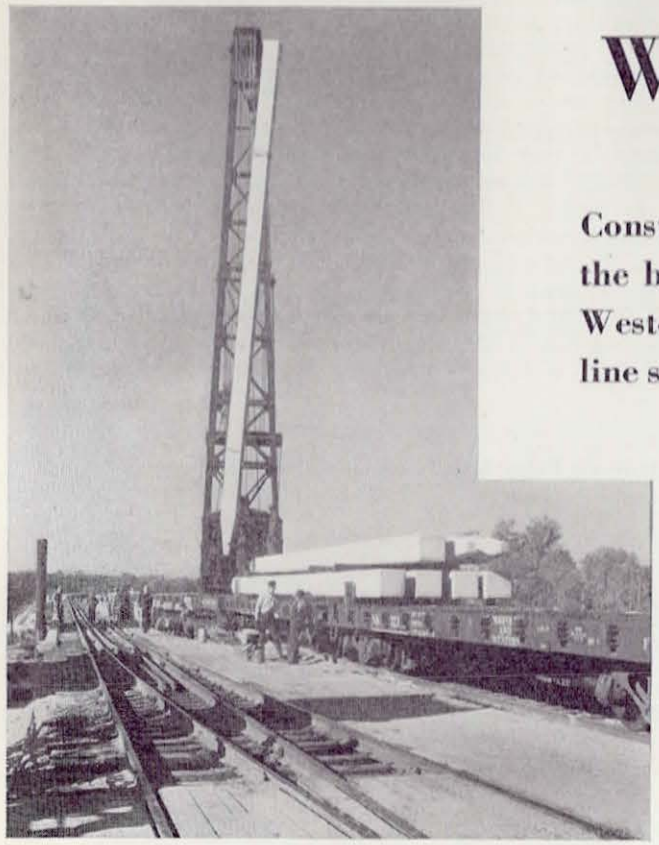
Though a distinction has already been made between planned and established improvements, it must be emphasized that existing projects must be treated more leniently. It may have been unwise to build them, but it may be still more foolish to fail to use them. From year to year it is simply the maintenance and new work (replacement) expenses which must be justified, not depreciation, interest, or even tax costs.

If a waterway will be serving monopolistic industries, it should be suspect. As long as a few friendly producers use a new economy in transportation expense to add to their profits, society has not gained much when it finances the new means of transportation.

Next, waterways developments need not be undertaken for the purpose of controlling railroads' rates, of supplementing the work of the I. C. C. If there is believed to be a net social loss from a proposed or existing project, toll collections may counterbalance this loss.

Drives 65-Ft. Concrete Piles Weighing 14½ Tons

Construction of pile-trestle approaches in the bridge-renewal job on the Norfolk & Western, involving a double-track main-line structure, required large precast units



One of The Piles Being Swung Into Position for Driving in the Westbound Portion of the Bridge

PRECAST reinforced concrete piles up to 65 ft. in length and weighing as much as 14½ tons each, were used recently in a bridge reconstruction project on the Norfolk & Western, which was carried out under main-line traffic. Involving a double-track single-span deck plate-girder bridge with trestle approaches, the job included the renewal of the existing main spans with heavier girders and the replacement of the existing timber-trestle approaches with reinforced concrete pile-trestle approaches. The latter embodied a cast-in-place slab deck on bents consisting of precast piles with cast-in-place caps. The new approaches are an outstanding example of modern practice in the design and construction of reinforced concrete trestles. Indicative of the size of the project was the driving of 256 concrete piles.

Location and History

The bridge is located on the main line of the Norfolk & Western near Suffolk, Va., at a point about 24 miles from Norfolk, where it carries the tracks across a portion of a municipal water-supply reservoir known as Lake Kilby. Originally built in 1856, the structure consisted of a single-track Fink truss span, 57 ft. long, which was carried on brick masonry abutments of the T-type. The Fink truss was replaced in 1898 with a deck plate-girder span. Each of the abutments had a stem about 23 ft. long, incorporating a single arch and wingwalls at the rear end, which were V-shaped. The approaches to the bridge were supported on earth embankments.

In 1914, the bridge was double-tracked and the grade was raised about seven feet. The existing track became the westbound track, and was raised at the bridge site by increasing the height of the bridge seats and the stems of the abutments, using concrete construction. Also, the existing girder span was reinforced by adding one fit girder, and a fit span of three girders on timber-pile piers was introduced to carry the new eastbound track. In both bridge spans the decks were of the "rail-top" type—rail sections laid side by side on the top of the girders and the spaces filled with concrete, thereby providing a floor for ballast, which was retained on the bridge by concrete curbs on both sides. Coincident with the work that was carried out in 1914, timber-pile ballast-deck approach trestles were introduced at both ends of the steel spans, giving the bridge an over-all length of 425 ft. 11 in. From time to time, as the piles in the approach trestles became decayed, they were cut off and frame bents built on top of them, so that by 1941 nearly all of the bents had been renewed.

Reasons for Replacement

It became evident last year that as a result of long use, increased weight of motive power, increased traffic, and the fact that the ballast on the bridge had reached a depth of as much as three feet (due to raises in the track grade), the entire structure should be replaced. Following studies of various types of construction for this location, it was decided that reinforced-concrete ballast-deck pile trestles would be the most economical for the approaches. Accordingly, the existing timber approaches were replaced with this type of construction. The steel spans were renewed with girders designed for Cooper's E72 loading. The existing T abutments were incorporated in the structure for supporting the new girders for the westbound track, which are 56 ft. 9 in. long, while the new girders carrying the eastbound track, which are 84 ft. 2 in. in length, are supported on piers of precast concrete piles with concrete caps.

The New Approaches

With the exception of the two panels at the outer end of each approach, the panels in the new approaches are 12 ft. long, there being 4 such panels in the west approach and 17 in the east. The end panel in each approach under the eastbound track is about 27 ft. long. Under

the westbound track, where the end panel in each approach spans between the end of the T abutment and the nearest bent, the panel length is 19 ft. 7 in. for the east approach and 18 ft. 11 in. for the west approach. Between this end bent and the next, the spacing is 10 ft. 3 in. in both approaches for both tracks. As rebuilt, the bridge has an over-all length of 411 ft. 9¾ in.—slightly less than that of the old structure.

In the new concrete pile-trestle construction, the precast piles are 20 in. square in section, and were cast in lengths of 45 ft., 50 ft., 60 ft. and 65 ft. The use of piles of such length is due to the fact that the subsoil at the bridge site is soft and relatively unstable to a great depth. The piles are reinforced with 1-in. square longitudinal rods and hoops of ¼-in. round rods. Sixteen of the longitudinal rods were placed in each 65-ft. pile and 12 in each of the shorter lengths.

Details of Bents

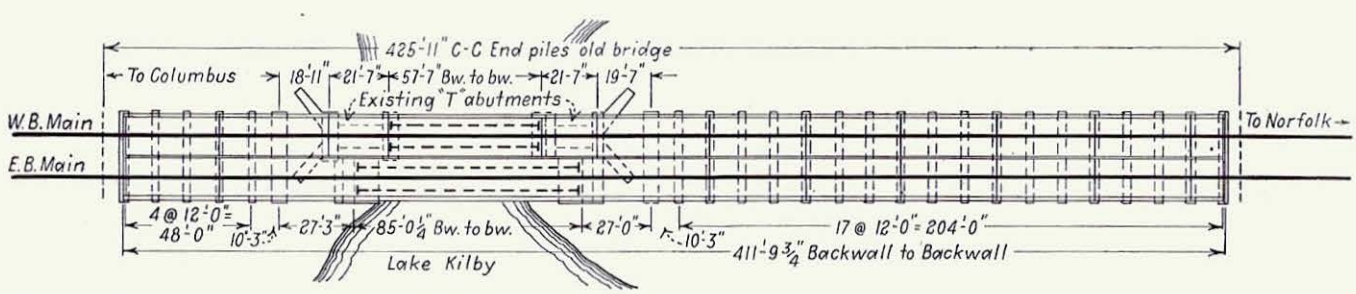
To form the bents, the piles were driven vertically in lines of eight piles each, with a single row of piles to each bent, except that the greater lengths of the end panels adjacent to the steel spans necessitated the driving of a double row of piles in the bent at the outer end of each approach. The cap at each single bent is 3 ft. deep and 31 ft. 3½ in. long, and encloses the upper 1 ft. of the piles. On the top surface of each cap is a raised lug or shoulder at each end, 1 ft. wide and 6 in. deep. These hold the slabs in the proper alinement laterally. In cross-section, the caps of the single bents are 4 ft. wide at the bottom and 3 ft. wide at the top, the change in width occurring at a point 1½ ft. above the bottom. Here, a ledge 6 in. wide is formed along each side of the cap. The ledges were provided to serve as supports for the falsework for the deck slabs, and greatly simplified the falsework problem.

Incidentally, the procedure in carrying out the reconstruction work was to build that portion of the bridge under each track at a time, with traffic diverted over the other side on a gantlet track, so that there is a construction joint at the center of each cap. The abutments of the approaches are substantially similar to the bents except that they have backwalls.

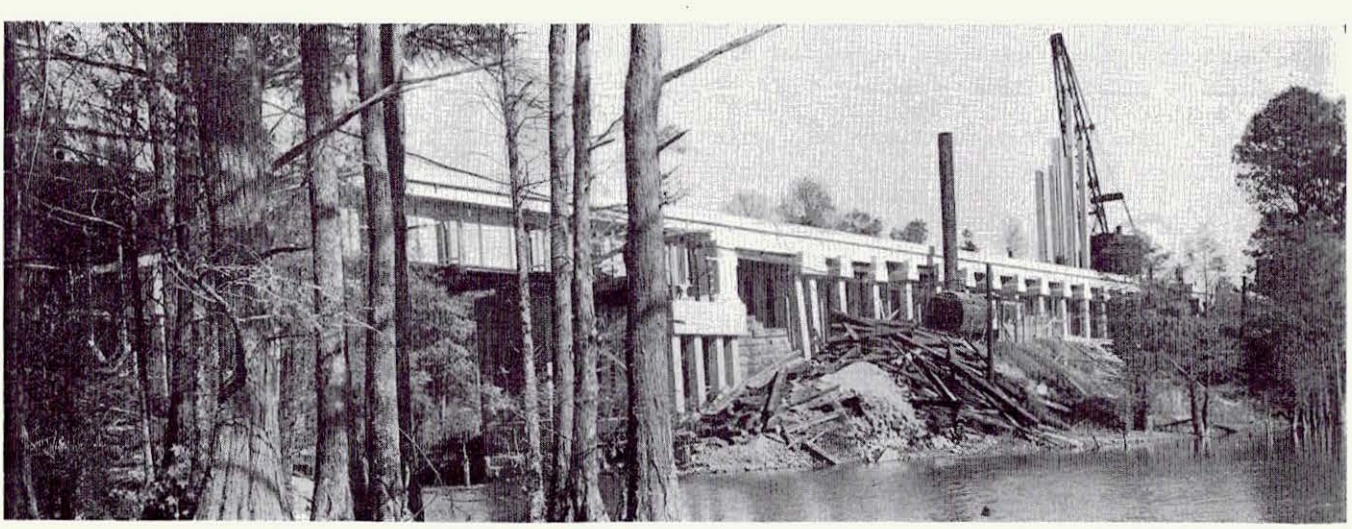
Except for the fact that they incorporate more piles and have larger caps of a different shape, the piers at the ends of the girder span carrying the eastbound track are essentially of the same construction as the bents in the approach trestles. Each of the piers has 19 piles arranged in four rows, three of which contain five piles while the fourth has four. The cap surmounting the piles at each pier is rectangular in plan, is 4 ft. 6 in. deep, and has a backwall 8 ft. 4 in. high, which carries the end of the deck slab in the adjacent approach panel. On the back face of each backwall there is a raised shoulder providing a 6-in. ledge that corresponds to the falsework shelves on the pile caps. A feature of the piers is that in each of them the piles are enclosed near the ground line in a diaphragm of solid reinforced concrete.

Three-Panel Continuous Slabs

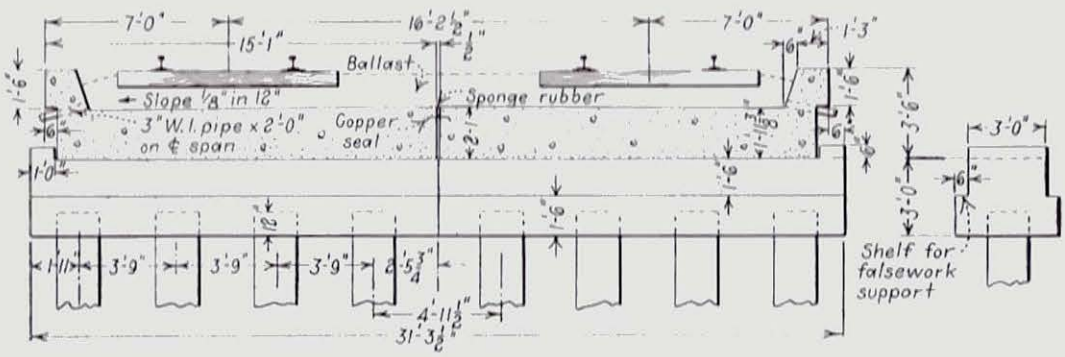
The deck slabs in the approach trestles are continuous over three panels, except at the eastern end of the bridge, where the end slab is only one panel in length. At their fixed ends the deck slabs are fastened to the bent caps by steel dowels, while at their expansion ends they are separated from the caps by sheets of zinc. In cross-section the slabs are trough-like, and are divided along



Situation Plan of the Reconstructed Bridge, Showing How the Presence of the Old T Abutments Under the Westbound Track Affected the Span Lengths in the Adjacent Portions of the Approaches



This View Shows the New Approach Under Eastbound Track at East End of the Bridge. Note Falsework Shelves on Caps



Typical Section Showing the New Deck Slab and Bent Construction

the center line of the bridge by a ½-in. joint. This is water-proofed with a seal of 20-oz. copper, placed 4 in. below the surface, and a filler of sponge rubber. A ½-in. space, between the edges of the slabs and the shoulders on the caps, is also filled with sponge rubber. In the typical slabs, the thickness is 2 ft. 1 in. at the center line of the bridge. For drainage, the top surfaces are sloped toward the sides on a grade of ⅛ in. in 12 in. Curbs 1 ft. 6 in. high along the outside edges of the slabs are pierced at intervals by 3-in. wrought-iron drain pipes. Concrete deck slabs are provided on the girder spans and also on the stems of the old T abutments.

The concrete used in the piles, which were manufactured at the bridge site, was designed for a minimum strength of 4,000 lb. per sq. in. at 8 days. That in the bent caps and the slabs has a design strength of 3,000 lb.

Construction Procedure

The eastbound portion of the bridge was built first, and a gantlet track was constructed on the westbound side of the structure to carry eastbound traffic. The work was started at the west end of the bridge and was carried forward progressively for its entire length. The piles were driven by a Vulcan "O" steam hammer (without leads), which was hung from the 60-ft. boom of a 40-ton locomotive crane.

While the pile driving proceeded, with the driver backing across the bridge, the caps and deck slabs were placed as promptly as possible. To avoid the delay that might otherwise have occurred early in the project while waiting for the newly-cast piles to set properly, high-early-strength cement was used in the manufacture of a number of the piles. That these piles attained the approximate design strength at an early date is shown by two typical test cylinders, which showed strengths of 3,714 lb. and 4,024 lb., respectively, at seven days.

When the eastbound side of the bridge was completed, all traffic was diverted to that side, again using a gantlet track, and the westbound portion was built. This work was also started at the west end and carried progressively across the bridge. In constructing the last slab in each side at the east end, high-early-strength cement was again used to reduce to a minimum the waiting period required before traffic could be diverted.

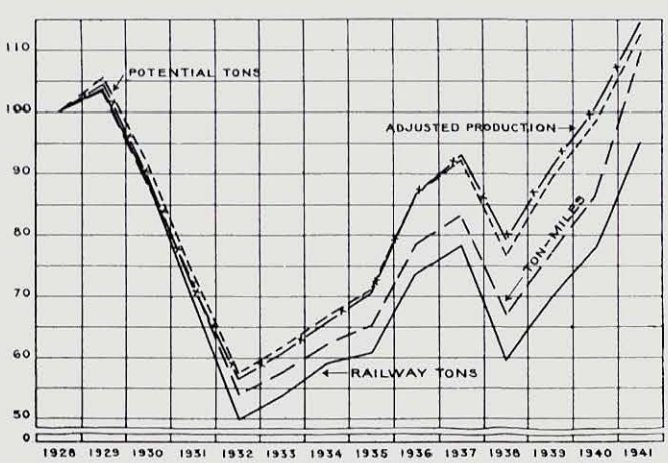
The work of replacing the bridge was started in May, 1941, and was finished on December 15. It was carried out under the general direction of W. P. Wiltsee, chief engineer, and under the direct supervision of A. B. Stone, then bridge engineer and now assistant chief engineer. J. Y. Neal, assistant engineer, was in direct charge of the field work. All concrete work and driving of the piles were done under contract by the J. P. Pettyjohn Company, Lynchburg, Va.

1941 Traffic 84.5 Per Cent of "Potential"

WASHINGTON, D. C.

ALTHOUGH the improvement noted since 1938 was "more pronounced" in 1941, Class I railroads last year still failed by 231,653,000 tons to maintain their 1928 position as carriers of freight originating from production in this country, according to the latest study of "Fluctuations in Railway Freight Traffic Compared with Production" which has just been issued by the Interstate Commerce Commission's Bureau of Transport Economics and Statistics. Based on the 1928 set-up as 100, the 1941 ratio of actual railway tons to "potential" railway tons was 84.5 per cent, as compared with 79.1 per cent for 1940, 78.4 per cent for 1939, and 77.7 per cent for 1938.

The study (Statement No. 4257) was prepared by E. S. Hobbs, senior statistical analyst; it is similar to the previous ones, that covering 1940 data having been reviewed in the *Railway Age* of November 1, 1941, page 705. It computes indices, based on 1928 as 100, of production, potential railway tonnage, and actual railway tonnage. Potential tonnage is the amount the railroads would have carried each year if they had been maintaining their 1928 position. Against this potential tonnage, the actual traffic is set up, and the differences between the two measure the railroad losses. "The term 'potential,'" Mr. Hobbs warns, "should not be understood as the tonnage which the railways might obtain merely by more solicitation or by offering lower rates. This would be only part of the 'potential' tonnage here defined. The



Commodity Production and Railroad Tons and Ton-Miles Compared (1928=100)

definition includes also the tonnage irrevocably lost to other transportation agencies and that lost because of industrial changes such as the substitution of water power for steam power."

In 1941 the Class I roads, if they had maintained their 1928 position, would have carried 1,490,889,000 tons, or 112.6 per cent of their 1928 traffic; actually, they carried only 1,259,236,000 tons, or 95.1 per cent of the 1928 business. Stated otherwise, the Class I roads carried 46.8 per cent of the country's 1928 production, whereas they handled only 38.8 per cent of the 1941 output. The latter compares with a 1940 figure of 36.3 per cent. If all classes of railroads and all classes of traffic (express and parcel post as well as freight) be considered, there was a 1941 failure by 264,245,000 tons to maintain the 1928 position.

Commenting on the figures, Mr. Hobbs says: "The significance of changes in the quantity of freight carried measured in tons is to some extent obscured by fluctuations in the proportions in the various kinds of commodities in the total. A ton of iron is not equal to a ton of butter from the standpoint of either transportation or use, and to lose a short-haul ton is not as serious to a railroad as to lose a long-haul ton."

Data by commodity classifications show that the 1941 production index for products of agriculture was 107.4, the index for Class I railroad tonnage 82.7. In 1928 the Class I roads carried 39 per cent of the agricultural production as compared with 30 per cent in 1941. The 1941 production index for animals and products was 124.3, the index of railroad tonnage 65. Between 1928 and 1941 the proportion of this production hauled by rail dropped from 72.8 per cent to 38.1 per cent.

Production of products of mines in 1941 was 110.8 per cent of the 1928 output, but railway traffic in that category was only 98.3 per cent of the 1928 business. In other words, the Class I roads received a haul on 51.2 per cent of the 1928 mineral output, whereas in 1941 they hauled only 45.4 per cent. The 1941 production index for products of forests was 97.7, and the index of railway tonnage was 73.4 per cent. Railroads in 1941 hauled 23.1 per cent of the production as compared with 30.8 per cent in the base year.

The 1941 output of commodities embraced in the manufactured and miscellaneous group was 132.8 per cent of the 1928 production, while the railroad-tonnage index was 108.1. Class I roads handled only 35.2 per cent of the 1941 production, as compared with 43.2 per cent in 1928. With respect to l.c.l. freight (not including freight in forwarder carloads) the actual 1941 tonnage was 78.1 per cent of the 1928 business, whereas the index for potential l.c.l. tonnage was 114.7.

Press Assn. Photo

American Soldiers are Getting Acquainted with the Railways of Australia—Some of Which, as the Coupler Shown here Shows Have Standards Akin to the U. S.

Wide World Photo

Railroads-in-War News

East Coast Oil Shipments Are Up

Carriers haul 823,260 barrels daily; ask for continuance of emergency rates

Tank car shipments of oil to the east coast averaged 823,260 barrels daily during the week ended August 29, according to an announcement on September 4 by Petroleum Coordinator for War Harold L. Ickes. This was an increase of 5,180 barrels daily over the volume moved in the previous week, when car loadings averaged 817,980 barrels daily.

In handling the movement the 34 oil companies loaded 27,442 cars. On the basis of an average of 210 barrels per car, these cars carried the equivalent of 5,762,820 barrels of petroleum and petroleum products during the week.

Meanwhile, the railroads have applied to the Interstate Commerce Commission for a one-year extension of the blanket fourth section relief they now have in connection with the emergency rate reductions on petroleum and petroleum products published a year ago because of the emergency conditions due to the war.

The petition would continue the present adjustment as to rates on gasoline, but proposes what the railroads regard as moderate increases in the charges on crude oil and fuel oil. Also, it proposes to eliminate reduced rates on naphtha, naphtha distillate, benzine, and casinghead gasoline on the ground that experience since the emergency rates were established has demonstrated that there is no acute emergency with reference to the movement of these products.

Also this week Mr. Ickes announced that the laying of the government-owned Carrabelle-to Jacksonville trans-Florida pipe line is scheduled to start on or about October 1, and that it is expected that construction can be completed by December 15.

At that time, according to Mr. Ickes, the line will commence delivery of 35,000 barrels of petroleum products daily to Jacksonville, from where it will be distributed by barge to consuming centers along the route of the Atlantic intracoastal waterway as far north as Virginia. The line is to be constructed entirely out of second-hand equipment, which is being dug up and dismantled in Texas for shipment to Florida.

Representative Hartley, Republican of New Jersey, has introduced in the House H. Resolution 536 which would create a select committee of 10 members whose duty it would be to conduct a study and investigation of the fuel oil, gasoline, and rubber supply in the United States. Representative Hartley is now serving on an unofficial committee of the House which has been attempting to make such a study.

ODT Appointment

Charles J. Wolfe, superintendent of motive power of the Western Maryland, has been appointed associate director of the Office of Defense Transportation's Division of Railway Transport, in charge of the Mechanical Section.

Tank Trucks Get General Exemption from ODT Order No. 6

Following through from previous postponements of the provisions of General Order No. 6 as they apply to tank trucks, the Office of Defense Transportation has now issued a general permit, exempting such trucks "until further order of this Office." Order 6, to which the permit applies, governs local delivery operations.

To Aid Bond Sale

At a meeting of the Western Association of Railway Executives on August 21, member lines adopted a resolution to aid the Treasury Department in its sale of war bonds by operating red, white and blue colored cars, publicizing the bond-selling campaign on their lines. Under the plan each railroad, where circumstances permit, will create its own color arrangement and paint the cars in its own shops.

Trainmen Give Plane to Army

At a Labor Day ceremony at Buffalo, N. Y., a representative of the Army Air Force accepted a Curtiss-Wright P-40 "War Hawk" pursuit plane donated by members of the Brotherhood of Railroad Trainmen and its auxiliary for service against the enemy.

ODT Tightens Control Over Tank Car Movements

Director Eastman of the Office of Defense Transportation on September 7 issued Exception Order ODT No. 7-2, widening ODT's tank car permit system and prohibiting the use of tank cars of less than 7,000 gallons capacity for the transportation of petroleum products into 17 Eastern states and the District of Columbia. The order, which becomes effective October 10, "is expected further to step up the flow of petroleum products into the Atlantic Seaboard area," the ODT announcement said.

The effect of the order will be to shift "the burden of the eastward long-haul petroleum movement to larger cars." Meanwhile, the permit system's plan for diverting short-haul traffic to trucks by restricting the use of tank cars on hauls of less than 100 miles will be extended to apply to hauls of less than 200 miles.

Navy Is Second in Railroad Use

S and A Chief says department is using 50,000 freight cars a month

The Navy is the second largest user of railroad facilities at the present time, Rear Admiral William Brent Young, paymaster general and chief of the Bureau of Supplies and Accounts of the United States Navy, disclosed in Washington, D. C., on September 10, during a round-table radio discussion.

"Thousands of freight cars are moving daily in the direct service of the Navy," Admiral Young said. "For instance, the Bureau of Supplies and Accounts alone routes on the average of 50,000 freight cars a month, and this does not include shipments under private bills of lading going to plants engaged in fulfilling Navy contracts."

Admiral Young declared that the American railroads are also performing transportation service for the navies of other Allied nations by delivering materials and supplies to foreign warships when they come into our ports, and by hauling whatever is procured in this country for the Allied navies under the Lend-Lease Act.

Providing rail transportation for the Navy is more difficult than providing it for the Army, Admiral Young pointed out. The reason for this, he explained, is "partly because the transportation schedule must meet the building schedule of a ship," and partly because "the Navy uses heavier armament than any other branch of the service."

Concerning what the railroads have done and are doing in meeting the transportation requirements of the Navy, the Admiral said: "I cannot speak too highly of the job that the railroads are doing for the Navy. We handle much of our rail transportation through the Military Transportation Section of the Association of American Railroads, particularly when the need for coordinated and expedited service is essential. We have received excellent cooperation from that railroad organization. As our transportation demands increase, we feel confident that we can depend on the railroads to continue giving us this same sort of service and cooperation."

Besides transporting fighting equipment for our military forces, the railroads are moving record quantities of food for the Army and Navy, it was stated by L. M. Betts, manager of the Railroad Relations Section of the Car Service Division, A. A. R. "This," Mr. Betts continued, "is not

(*Continued on page 420*)

Troop Movements Handled Smoothly

So says Army, noting 9-months volume 3 times that of World War I

Troop movements during the first nine months of the present war have been more than three times the number during the comparable period of World War I, the War Department announced last week. "Close cooperation between the nation's railroads and the Transportation Corps, Services of Supply," the statement said, "made it possible to accomplish these movements without serious disruption of civilian traffic, although many of them took place at the peak of a holiday season, and were accompanied by enormous loads of military freight."

In the nine-month period beginning December 7, 1941, troop movements by rail totalled approximately 6,500,000, as opposed to 1,916,417 for the first nine months of the last war. In June, 1942, the Transportation Corps moved almost a million soldiers by rail, as opposed to 308,000 in June, 1917.

"The rapid development of the 1941 emergency movements," the statement went on, "was achieved with less rolling stock than was available during a like period in 1917. At the time of 1917 mobilization, a nation-wide inventory showed 2,596,252 locomotives, coaches, freight, passenger, and baggage cars in the service of the railways, whereas at the start of hostilities in 1941, less than 2,000,000 cars and locomotives were at the disposal of the Army. The present expeditious movement of troops may be accounted for by several factors, perhaps the most important of which was detailed advance planning by the Transportation Corps. Mechanical elements contributing to the success of the operations included more effective motive power permitting longer trains, decrease in turnaround time, better coordination between the Army and the railroads, and increased speed of trains. In 1917, the average speed of special troop trains was 19.6 miles per hour, compared with an average speed today of 30 miles per hour."

Up to now the Army has employed more than the total number of Pullman and tourist cars used during the entire last war. Thus "the traveling comfort of the U. S. soldier is given every possible consideration." The great increase in the use of sleeper cars offsets a 75 per cent decrease in the over-all use of coaches. Except in unusual circumstances, the War Department provides sleeper-car accommodations for its troops when the movements take place during an entire night's journey. To date, no movement of troops as a unit has taken place in box cars or freight equipment.

The American soldier was moved an average of three times between induction and embarkation for overseas in 1917-18. Today, he averages six moves before he leaves the country, "reflecting the more intensive training program now employed." Present-day transportation problems, the statement also said, have been complicated by "the great increase in military freight traffic, the result in part of large-scale mechanization of the Army." The freight-carrying requirements of the Army during the past nine months "have been twice those of the entire last war." Yet the present organization of the Transportation Corps "has kept abreast of the vast changes in traffic control and has been able to avert congestions and delays." The Passenger Branch of the Corps responsible for the movement of all troops and their baggage is charged with the movement of soldiers who travel monthly in excess of 700,000,000 passenger miles.

Railway Labor Chiefs Pledge Their Cooperation to Eastman

The pledge of railroad unions to work with the Office of Defense Transportation toward the solution of many war-time railway transportation problems was announced on September 5, by Joseph B. Eastman, ODT director, following a conference of the committee of five labor executives appointed by the railroad brotherhoods.

Headed by David B. Robertson, president of the Brotherhood of Locomotive Firemen and Enginemen, the committee held its first meeting on September 4, with Mr. Eastman, and with Otto S. Beyer, director of ODT's Division of Transport Personnel, and V. V. Boatner, director of the Division of Railway Transport.

A discussion of the general manpower situation in the railroad industry resulted in the committee's pledge to use the offices of the various labor organizations to aid in checking on the manpower shortage, and to help recruit, so far as possible, new labor to help meet the demands.

The committee, said an ODT statement, "emphasized the necessity for the relaxation of age limits and physical requirements on the part of the railroads so that additional personnel for yard and train services may be obtained from men in the age groups from 45 to 55." A number of railroads, it was said, already have extended age limits.

Intensified efforts on the part of railroad labor to conserve equipment, supplies and manpower was promised by the committee. The discussion led to the exploration of possibilities for a broader plan of action in various phases of railway transportation through the appointment of joint labor-management committees to function under the general guidance of a central labor-management committee consisting of chief executives of railroads and of railroad labor organizations.

With Mr. Robertson, the members of the committee are, George M. Harrison, grand president, Brotherhood of Railway & Steamship Clerks; Samuel J. Hogan, president, National Marine Engineers' Beneficial Association; B. M. Jewell, president, Railway Employees' Department, American Federation of Labor; A. F. Whitney, president, Brotherhood of Railway Trainmen. Felix H. Knight, president of the Brotherhood of Railway Carmen represented Mr. Jewell at the meeting. Also attending was J. G. Luhrsen, executive secretary of the Railway Labor Executives' Association.

ODT Tightens Hold on Motor Vehicles

Announces "certificate of war necessity" seen effective November 15

General Order ODT No. 21, taking control of the country's 4,890,000 non-military trucks and 154,000 buses, as well as taxicabs and other commercial vehicles, was issued this week by Director Eastman of the Office of Defense Transportation. This drastic plan "to attain further conservation of such equipment for war purposes" will become effective November 15.

The order, supplementing regulations already in effect, will require motor vehicle operators to obtain from ODT "certificates of war necessity," governing the maximum mileage that vehicles may be operated, or the minimum loads that may be carried, or both. No operator subject to the order will be able to obtain gasoline, tires, or parts without a certificate.

In addition to private automobiles, the vehicles exempt from the order will be those operated by or under the direction of the military or naval forces of the United States or state militias; commercial vehicles operated by dealers exclusively for the purpose of selling such vehicles; vehicles having a capacity of not more than seven persons which are used in group riding to haul persons to and from work, if such vehicles are not used in any other service or compensation.

In a statement accompanying the order, Director Eastman said that in view of the present critical materials situation and the heavy wartime traffic demands on transportation agencies, commercial motor vehicles and their tires "must be given the best possible care; and *every mile of unnecessary operation must cease.*" Previously he had noted that trucks and buses are carrying "tremendous" volumes of traffic, adding that the railroads, now operating "to near capacity" could not take over that traffic—"first, because they do not have the capacity, and second, because they are so located that they could not handle a great part of this traffic, even if they had the capacity."

The order applies to all types of trucks and other rubber-tired vehicles propelled or drawn by mechanical power and built or rebuilt primarily for the purpose of transporting property, except motorcycles; and to all motor vehicles used in the transportation of passengers or which are available for public rental, including ambulances and hearses.

The certificates of war necessity, the ODT announcement said, will be drawn with the objective of assuring that: (1) Operations be confined to those which are necessary to the war effort or to the essential domestic economy; (2) operations be so conducted as to attain maximum utilization of the equipment involved; (3) operators conserve and providently utilize rubber or rubber substitutes and other critical materials used in the manufacture, maintenance and operation of all vehicles

covered by the order. The order authorizes any enforcement officer of any state or political sub-division to report to ODT any instance in which a vehicle is operated without a valid certificate of war necessity or in violation of any ODT order.

It further provides that ODT may cause any vehicle for which a certificate has been issued "to be operated in such manner, for such purpose, and between such points as the Office of Defense Transportation shall from time to time direct," regardless of "any contract, lease, or other commitment." Authority is also provided to cause any vehicle to be leased or rented, except that for-hire truckers will not be required to lease equipment to private truckers.

Applications for certificates of war necessity must be made on forms to be supplied by ODT. They are to be submitted at ODT field offices nearest applicants' home offices or principal places of business. The certificates will not be transferable. A certificate issued for a single vehicle must be carried on that vehicle at all times. When a certificate is issued for a fleet of vehicles (three or more owned by one person), a fleet certificate must be carried on each vehicle.

Except as authorized by rationing regulations of the Office of Price Administration or other rationing or allocating agency, no person on or after November 15 may furnish gasoline, parts, tires, or tubes to any operator affected by the order unless the operator or driver presents a certificate or signs a receipt, showing the number of the certificate covering the purchase. Under an ODT-OPA arrangement, coupons authorizing the purchase of fuel, tires, and tubes will be issued only to operators presenting certificates; and gasoline will be rationed by OPA boards in accordance with the terms of the ODT certificates.

Tires of all vehicles must be checked at an inspection agency designated by OPA every 5,000 miles, or at the end of each 60-day period, whichever occurs first. The order prohibits the continued use of any vehicle thus inspected unless the inspection agency has certified that all reasonable adjustments, repairs or replacements "necessary to conserve and providently utilize" the vehicle's tires have been made, or unless the operator is unable, under rationing regulations, to make such repairs.

Government to Pay Increased Freight Charges on Oil

The Defense Supplies Corporation has announced the placing in effect of a plan whereby it will reimburse eastern oil marketers for any increase in their transportation costs due to the disruption of tanker shipments on the east coast and the substitution of other inland forms of transport. Although the plan was announced sometime ago, the mechanics have just been completed, and it will be retroactive to August 1.

Claims for increased freight costs for shipments by rail, truck, barge, or pipeline must be made by the marketer who initially pays the freight and should be submitted to the Defense Supplies Corporation at 33 Liberty street, New York City. Seventy-five per cent of the claim will be paid immediately, and 25 per cent will be subject to further audit. The plan was worked out in cooperation with the Office of Price Administration and the Office of Petroleum Coordinator. A similar plan is now in effect for shipments of coal to New England by rail which formerly went by water.

Railroads Study Defense Against Bombing

Representatives of the Association of American Railroads met recently with Brig. General Julian S. Hatcher, Chief of the Ordnance Military Training Division, and Lieut. Colonel T. J. Kane, Chief of the Bomb Disposal School Division of the Ordnance Department, to discuss steps necessary to the peculiar problems of railroads in case of actual bombing.

Lt. Col. Kane (from the B. & O.), chief, Bomb Disposal Div.

Much time was devoted to this discussion. The various representatives brought up problems peculiar to their own systems, in addition to the United States as a whole. There being no question that transportation has become one of the most vital needs

A Group of Railway Officers at an Army Post to Study Bomb Protection

Left to right: Harry A. De Butts (vice-pres., oper., Southern); L. E. Dale (transportation engineer, A. A. R.); George L. Sitton (chief engr., m. of w., eastern lines, Southern); D. Y. Geddes (asst. to gen. mgr., P. R. R.); W. D. Simpson (asst. chief engr., m. of w., S. A. L.); A. A. Martz (inspector of police, P. R. R.); H. R. Geib (asst. chief engr., m. of w., P. R. R.); E. L. Bachman (gen. supt. m. p., P. R. R.); L. A. Thomas (asst. to vice-pres., Southern); W. S. H. Hamilton (equip. elec. engr., N. Y. Central.)

of the war effort, it is the aim of the Army to furnish all possible protection. Arrangements have been made to train and equip key personnel, stationed strategically, and the necessary overhead to make the plan effective.

Lieut. Colonel Kane, at whose suggestion the meeting was called, is a former railroad man of long service with the Baltimore & Ohio. Previous to reporting for service in February, 1941, he was general yardmaster at Rochester, New York.

ODT Coordinates Bus Routes

Four additional special orders co-ordinating intercity bus service have been issued by Director Eastman of the Office of Defense Transportation.

Special Order ODT No. B-18, effective September 15, affects the Williamsport, Pa.-New York City service of three bus companies, Edwards Motor Transit Company, Jersey Central Transportation Company, and the Reading Transportation Company, the order covers staggering of schedules and interchange of tickets and joint use of depots. Also, service on the route is frozen at the present level.

Special Order ODT No. B-19, effective October 1, directs the Gulf Transport Company and the Belleville-St. Louis Coach Company to adjust their service between St. Louis, Mo., and Sparta, Percy and Chester in southern Illinois, so that elimination of duplicate routes will save 6,120 miles of scheduled service monthly.

Special Order ODT No. B-20, effective September 15, directs the Pacific Greyhound Lines and the Parrish Stage Lines to interchange tickets and use joint stations to relieve over-loads on the common route of the companies between El Paso, Tex., and Deming, N. Mex.

Special Order ODT No. B-21, effective September 15, orders the Empire Trails, Inc., to schedule its daily round trip between Chicago and Columbus, Ohio, shortly after one of the three round trips jointly operated by Pennsylvania Greyhound Lines, Inc., and Great Lakes, Inc., so that Empire Trails can carry the overload and reduce doubling by Greyhound.

ODT Section Will Work to Prevent Sabotage

Acting "to surround American railroads with every available protection against sabotage and other destructive acts," Director Eastman of the Office of Defense Transportation, has established a section in the Division of Railway Transport, under Luther A. Thomas, assistant to the vice president, Southern, to work with the Railway Protective Section.

The section is designed to cooperate closely with the Office of Civilian Defense, the military and naval intelligence, the Federal Bureau of Investigation and other federal agencies, and state and local governments. According to the announcement, it will immediately begin: Surveys to ascertain the security status of the railroads; a study of any security deficiencies; framing recommendations for security action by owners and operators, by state and local government, and by federal departments and agencies; inspections to determine that adequate standards of security against sabotage and other destructive acts or omissions are maintained; and necessary steps within the scope of its authority for the protection of all transportation facilities against sabotage.

In addition to Mr. Thomas, the committee includes: John M. Hall, director of the Bureau of Locomotive Inspection, Interstate Commerce Commission; Shirley N. Mills, director of the Bureau of Safety, Interstate Commerce Commission; Harold L. Denton, general superintendent of police, Baltimore & Ohio; and Walter G. Fetzner, chief special agent, Chicago, Burlington & Quincy.

OPA Issues Special Price Regulation for Railroad Ties

Because the price formulas of the General Maximum Price Regulation presented "major difficulties in establishing representative maximum prices for railroad cross ties and switch ties," Price Administrator Henderson has issued an independent regulation—Maximum Price Regulation No. 216—covering these products. It became effective September 5.

The regulation, as the OPA announcement put it, was issued "in recognition of the fact that the railroads . . . traditionally have established the prices at which railroad ties are sold by producers—mainly so-called 'tie hackers' and small sawmill operators"; and thus it sets maximum prices on the basis of the buyer's price, rather than the seller's. In general, the prices are fixed at the highest level at which the buyer purchased ties during the period January 1, 1942, to March 31, 1942.

Other factors which made the separate regulation desirable, according to OPA, were the fact that almost every road purchases ties according to its own specifications; and the entrance of the government into the market as a large-scale buyer of ties. The regulation covers "approximately 88 per cent of total tie production, including those manufactured in the Southern pine and Central hardwood regions, from oak, pine, gum and cypress and those produced east of the Rocky Mountains from lodgepole pine, ponderosa pine, beech, birch and maple." The announcement went on to say that the remainder of the tie output is covered by Maximum Price Regulation 26 (Douglas Fir and Other West Coast Lumbers) and a contemplated regulation for redwood.

The regulation contains three pricing formulas, applying in turn to ties purchased by railroads, by the government, and by others, such as brokers. The maximum price for railroads is the highest price at which each individual road purchased each size and species of tie at each delivery point during the first quarter of 1942. This pricing formula is to be applied whether the ties are treated or untreated, and whether the point of delivery is within the producing territory, at a treating plant, or at any other point specified by the railroad.

With respect to ties purchased by the government, a 10 per cent differential over on-line railroad maximum prices is provided. In other words, the government may pay a producer 110 per cent of the price permitted the railroad on whose line the ties were purchased. OPA anticipates that such government prices generally will be below prices paid by off-line railroads. The formula regarding government purchases applies only to untreated ties; and charges for treatment, as well as delivery charges, may be added. For persons other than railroads or the government, the ceiling price is the same as the maximum price permitted the railroad on whose line the ties are produced, with the exception that treating and transportation charges may be added.

There is an adjustment provision whereby a railroad which purchased ties between March 31, 1942, and May 11, 1942, at higher prices than in the first quarter may apply for adjustment within 30 days for the September 5 effective date of the regulation. Such applications must be filed with the Washington, D. C., office of OPA; and they must contain specified price and other data.

Conditioning Passenger Cars for Troop Movement

In a recent circular letter to voting and associate members, the A. A. R. Mechanical division reports that a number of troop trains originating at army camps and delivered to connecting lines have a large number of brake shoes worn completely out and a portion of the cars have U. C. brakes set in direct release position and others in graduated release position, necessitating delays to trains enroute in order to apply brake shoes and change the brake settings.

In order to expedite the movement of troops and their equipment, the Mechanical division recommends that the brake equipment on cars used in this service be prepared and adjusted at originating points before being set for loading so as to insure their movement over maximum distances without further adjustments. This can be accomplished by compliance with the following instructions which are not inconsistent with recommendations "governing the operation of passenger cars in freight trains," circular DV-846 of May 27, 1935:

Brake equipment should be "in date" and in proper operating condition.

Brake shoes should be new or in sufficient thickness to complete the trip to final destination.

Slack adjusters (when cars are so equipped) should be adjusted to provide maximum take-up before requiring readjustment.

Piston travel should be not less than nominal nor more than one inch greater than nominal.

Passenger cars having graduated release feature must have this feature cut out for movement in freight trains.*

The time and labor involved in disconnecting the emergency reservoir and plugging the connections or removing the protection valve springs on the U. C. equipment in cars to be handled in freight service and recoupling them upon the return of the car to passenger service is not justified by service performance.

The water-raising system on passenger cars, when handled in freight service should be cut

* Where mixed trains are involved, having more than 25 cars, instructions as above should be observed. Where mixed trains are involved, having a total of 25 cars or less, they may be operated in the conventional manner without any special changes or provisions. No change is recommended in the standard setting of the safety valves from 60 lb. or any other value.

out when conditionings permit and a cut-out cock is available in the water system supply pipe.

The method of handling mixed trains is primarily the responsibility of each individual carrier in accordance with standard train handling instructions. The above instructions were prepared by the A. A. R. Committee on Brakes and Brake Equipment.

Navy Is Second in Railroad Use

(*Continued from page 416*)

only because of the size of our fighting forces and the necessary diversion of much of this traffic from other carriers to the railroads, but also because Uncle Sam believes in having the best-fed Army and Navy in the world."

In order to feed the Army and Navy, Mr. Betts revealed, about 3,400 carloads of foodstuffs are hauled by the railroads each week. According to Mr. Betts, the railroads move between 700 and 1,000 carloads of food each day to the ports for shipment to our Allies. From the end of April, 1941, to the first of July, 1942, America delivered more than 5,700,000,000 pounds of farm products to representatives of the United Nations, he said, and nearly all of this traffic was handled by the railroads.

L. O. Head, president of the Railway Express Agency, declared that more than half of his company's traffic is now definitely identified with the war.

"We have tried to keep ahead of demand by establishing our own points of contact with every new production plant and with all of the training camps, posts and stations of the Army and Navy," Mr. Head said. "In this way, we will be ready when called upon. For instance, we may be asked to move machines which are large but so carefully adjusted that perfect handling en route is imperative. We may have tiny scientific devices of extreme fragility to carry rapidly to distant points. But whatever it may be, we must be prepared to perform the service expected of us."

In describing some of the many things that the express company is doing in the war effort, Mr. Head referred to the daily movement of hundreds of special refrigerated carriers containing blood donated to the Red Cross for transfusions to our wounded in the war. This blood, he said, is shipped under a temperature of 40 degrees to laboratories for processing into dry plasma.

Materials and Prices

Following is a digest of orders and notices of interest to railroads issued by the War Production Board and the Office of Price Administration since July 26.

Aluminum—Supplementary Order M-1-i, issued August 19, revokes Order M-1-e and M-1-f, and consolidates their provisions in a combination conservation and use-control order over aluminum. Aluminum for the armed forces is limited to implements of war. Low-grade aluminum, which is the only aluminum permitted for certain purposes, is defined as containing more than 4 per cent copper and either iron or zinc in excess of 1 per cent. All requests for allocation of eligible items, as listed in the order, are to be made on Form PD-26. Requests for allocation of aluminum for purposes not eligible are to be made directly to the Aluminum and Magnesium Branch. Use of aluminum in alloys, other than zinc alloys, is limited to a maximum of 15 per cent in any one alloy, and a maximum average of 12 per cent of aluminum in any one month. Procedure for obtaining aluminum for plant maintenance and repair, where no substitute is practicable, is clarified.

Boiler chemicals—Section 1225.1 of General Inventory Order M-161, as amended August 3 to include soda ash and caustic soda, permits unlimited storage by industrial users of caustic soda and soda ash.

Cement—The effective date of a provision of Order L-179, which prohibited the exclusive allocation of storage space for Portland cement to any customer, was postponed until September 20 by an announcement on August 25. The postponement was made to permit purchasers who had already paid for tests on large amounts of cement to claim the cement so tested.

Construction machinery—A nationwide inventory of used construction machinery will be carried out by a Used Construction Machinery Section of the Construction Machinery Branch of WPB, it was announced August 1. A construction machinery specialist will be appointed for each of the WPB regional offices and will be in charge of the inventory in that region. Inventory cards will be mailed to each owner of such equipment for a complete listing. Information sought will be the kind, type, size, condition, manufacturer, serial number, model number, year manufactured, year purchased, type of power, attachments, estimated cost of repairs, sales price and other pertinent data for each piece of equipment owned. Track-laying tractors, cranes, shovels, drag-lines, pavers, mixers, scrapers, motor graders, pile drivers, compressors and auxiliary mounted equipment are included. A complete inventory of available equipment will be kept up-to-date at each regional office for the information of the Army, Navy, Governmental agencies and private contractors engaged in war work.

Copper—Limitation Order L-161, issued August 25, prohibits the assembly of fuses with copper parts other than parts carrying electric current, effective September 25. Sales of fuses by manufacturers are restricted, effective September 10, to sales to other manufacturers or on A-10 or higher preference ratings. Adequate supplies are expected to be made available to civilian users of fuses since distributors are permitted to obtain fuses and other electrical supplies through the use of Form PD-1X.

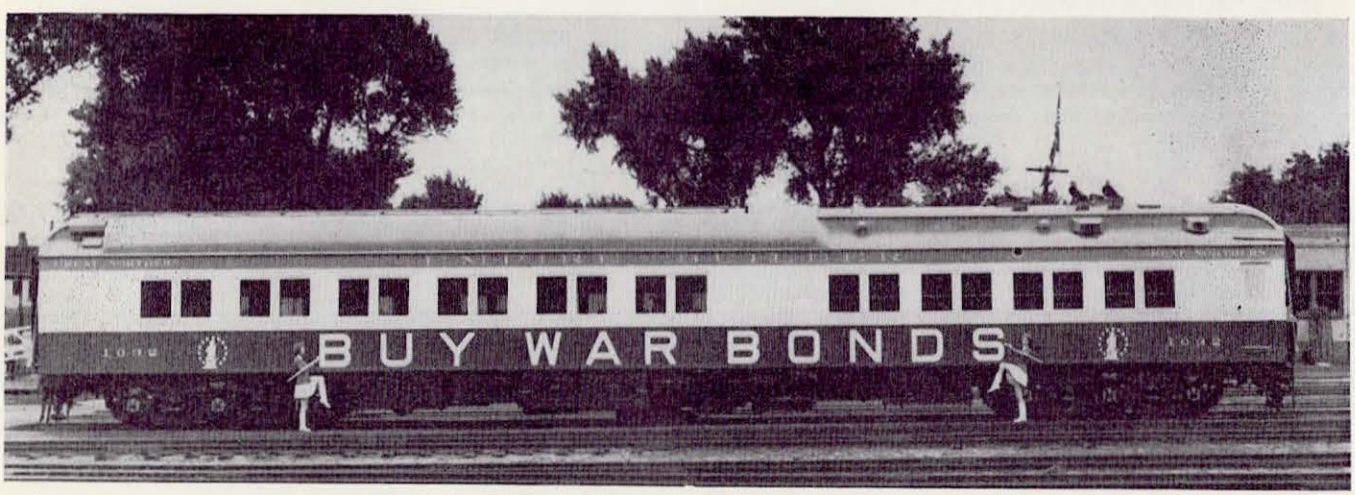
Excess stocks—Organization of the Steel Recovery Corporation was announced August 8 to act as agent of the Metals Reserve Company to make arrangements for the purchase and sale to war contractors of idle, frozen and excess stocks of iron and steel. It will function in much the same manner as the Copper Recovery Corporation which is now in the process of channeling copper into war use. Headquarters of the Steel Recovery Corporation will be established in Pittsburgh. By the end of August the first of 250,000 inventory report forms will be mailed to known holders of iron and steel. These will go to 37,000 owners of stainless steel. Similar programs covering other types will follow. Accompanying the forms will be a letter explaining the program and a list of prices at which the government will purchase material which cannot be used in its existing form and must be remelted before taking its place in the war effort.

Gas fuel—Order L-174, issued August 25, restricts the delivery of manufactured gas to new industrial and domestic consumers.

Hardware—A builder's Hardware Manual listing the size, kind and quantity of builders' hardware that may be used in certain types of construction, issued July 15, supersedes builders' hardware specifications previously issued by other government agencies and comprises a set of maxima for the guidance of architects and builders. Previous orders restrict the materials which may be used in the manufacture of builders' hardware to some extent, but the manual goes a step further and places restrictions on the quantity and the type of builders' hardware that may be used in new construction.

Industrial cars—Order L-97-b forbids any producer, regardless of prior commitments, to manu-

* * *



Great Northern Aids Bond Sales

A modernized version of Paul Revere is this Great Northern dining car, calling on the countryside along the route of the Empire Builder to "Buy War Bonds." It was outfitted in a glistening red, white and blue at the railroad's Jackson street shops at St. Paul, Minn., and was placed in operation on August 31.

facture or deliver railroad-type industrial cars except upon specific authorization. Restrictions contained in the order apply also to the repair, rebuilding or converting of such cars for sale but not to repairs by or for an owner where there is no intention to sell. The approved schedules must be maintained without regard to any preference ratings already assigned or hereafter assigned, prior commitments or purchase orders.

Industrial equipment—Amendment No. 1 to Limitation Order L-123, issued August 27, raises the preference rating necessary to obtain certain types of general industrial equipment from A-9 or higher to A-1-c or higher, except for Army, Navy and certain other exempted transactions. The order covers many types of general industrial equipment, such as passenger and freight elevators, fans, compressors, pumps and other equipment designed for industrial use. Two-wheel hand trucks with a retail sale price not in excess of $10 are excluded.

Priority indexes—A supplement to the printed compilation of priorities orders and forms in force May 31 was issued August 3 for the period July 23 through July 31; another supplement, issued August 15, adds priority actions for the period August 1 through August 12; another, issued August 21, adds priority actions for the period August 13 through August 19; and another supplement, issued August 28, adds priority actions for the period August 20 through August 26. A new booklet is in the process of publication which gives an alphabetical listing of all priority actions officially issued under the priority powers during the months of June, July and August. Copies of the revised booklet and supplements issued may be obtained from Room 1501, Social Security Building, Fourth Street and Independence Avenue, S. W., Washington, D. C.

Priority rules—Priorities Regulation No. 12, revised August 11, establishes new procedures for applying high preference ratings. Hereafter, all AA-1 and AA-2 ratings are to be treated as the same, neither will take precedence over the other. A new rating, AA-2X, is created which will be lower than the AA-1 or AA-2 rating, but higher than AA-3. The purpose of the change is to raise all outstanding AA-2 ratings to the AA-1 level without rerating them individually, and to provide a new rating which will correspond to the AA-2 level. When provision for reratings was first made, all outstanding AA ratings issued before that time were automatically changed to AA-2. Permission to extend reratings to obtain operating supplies up to 10 per cent of the value of materials processed to fill a rerated order is granted to all companies whose orders are rerated, subject to restrictions identical with those already imposed by Priorities Regulation No. 3. Companies operating under the Production Requirements Plan were previously forbidden to extend reratings to obtain operating supplies. Provisions for extending reratings to suppliers have been simplified. The new higher ratings may now be applied to outstanding purchase orders for material to fill the rerated order by telegram, letter or by issuance of new purchase orders with the higher ratings, as well as by use of PD-4Y certificates. The regulation now provides that no company receiving a rerating is required to interrupt its production schedule for 40 days if such interruption would cause a substantial loss in production. Companies operating under the Production Requirements Plan may, not oftener than twice a month, revise the rating pattern of its outstanding purchase orders in accordance with reratings it has received. This means that if a PRP unit which is filling a certain volume of A-1-a orders has 50 per cent of these orders raised to AA-1, it may without further authorization raise to AA-1 the ratings on 50 per cent of the purchase orders it has placed for materials to fill these rated orders.

Rubber—Revised Supplementary Order M-15-b which consolidates M-15-b and 13 amendments issued since December, 1941, as issued August 25, restricts the consumption of crude rubber, reclaimed rubber and scrap rubber in all civilian products to specific allocations. The previous M-15-b Order included two types of product-listings for which rubber could be consumed. The first involved the use of a percentage formula based on previous consumption, while the second enumerated products for which a manufacturer was required to secure specific authorization. The latter type of control is now to be applied to the use of rubber in all civilian products. Authorizations will be issued from time to time, usually from month to month or from quarter to quarter, after consultation with the Office of Civilian Supply. All persons who wish to consume crude rubber, latex, reclaimed rubber or scrap rubber after October 1 must file an application on Form PD-407 with the Rubber and Rubber Products Branch not later than the tenth day of the preceding month. Authorizations for September will be issued as they have been in the past.

Scarce materials—A report on relative scarcity of certain materials, issued August 21 by the Conservation and Substitution Branch of the Conservation Division, lists materials in three groups, ranked on the availability of existing supplies. Group one covers materials of which the supplies are inadequate for war and most essential uses; group two covers materials of which there are sufficient supplies for many essential needs; group three covers materials of which the supplies are adequate for all appropriate types of present demands, including use as substitutes. Civilian industry is denied the use of items in group three and must use substitutes. All steel and zinc are now placed in this group, as well as many grades of lumber. Scrap materials, such as iron and steel and rubber scrap, fall in the insufficient for essential needs category. The items listed in group three are largely the mass products of coal mines, oil fields, quarries, forests and fields, with few metals or chemicals included.

Softwood—Conservation Order M-208, effective August 27, replaces the temporary construction lumber freeze order, L-121, covering the distribution and use of softwood lumber. All purchase orders for softwood lumber are divided into four classes. Class 1 orders for the most urgent needs will bear preference ratings of AAA, AA-1 or AA-2; Class 2 orders will bear preference ratings of AA-2X or lower, but higher than A-1-a, including uses in list A; Class 3 orders will bear preference ratings A-1-k through A-1-a, including uses in list B; Class 4 orders will bear preference ratings lower than A-1-k, including those uses in list C. When an order bearing a preference rating is received by a producer or distributor, it will fall into one of these four classes. Thereafter, the rating on the particular purchase order will be treated as though it were the highest rating in the class in which it falls. For instance, all orders in Class 2 will be treated as if they bore AA-2X ratings. The order also provides that no person may accept delivery of softwood lumber unless the lumber is required for use within 60 days, or in the case of green lumber needing seasoning, 120 days. Delivery may not be accepted where such delivery creates stocks in excess of 60 days' supplies. After August 27, no preference rating shall have any force or effect with respect to the delivery of softwood logs to be used for lumber or for any other purpose. List B, to which A-1-a ratings are assigned, includes lumber for the maintenance and repair of structures and equipment for railroads. The order also covers all softwood lumber of all species, grades and sizes, except shingles and lath, plywood, veneer or used lumber. Cypress is included; cross arms, railroad ties, etc., are covered by the order, if they are products of sawing and if they are softwood. Telephone poles and piling are not covered by the order. A railroad that normally carries a year's supply of lumber and timbers cannot replace small quantities on this basis since no person may accept delivery of softwood lumber for ultimate consumption unless the lumber is required for use within 60 days after receipt.

Steel plate—An amendment to Order M-21-c, issued July 28, restricts deliveries of iron and steel plates to ratings of A-1-k or higher, with certain exceptions. The order previously prohibited producers from making deliveries at lower ratings. Exceptions are made for deliveries by warehouses for maintenance and repair purposes; for special authorized sales to designated classes of buyers.

Storage batteries—Limitation Order L-180, announced August 29, provides that from July 1 to December 31 producers of batteries for replacement may make only 90 per cent of the number of replacement batteries sold by them during the same period in 1941, and only half of this number may be manufactured before September 30. A provision sets forth production standards based on ampere hour capacity and container sizes. Special sizes may be produced under certain conditions, but it is estimated that when restrictions on size become effective September 30, the number of stock sizes of batteries will be reduced from about 100 to 17. The order supersedes Supplementary Limitation Order L-4-b, issued April 25, and Limitation Order L-35, issued January 22, both of which pertained to the production, type and size of batteries. Distributors are prohibited from holding more than a 60-day supply in any one month. Such a supply means the aggregate number of replacement and rebuilt batteries sold during the corresponding month in 1941 plus the number sold in the next succeeding month in that year. Producers and distributors are prohibited, effective immediately, from selling or delivering a replacement or rebuilt battery to a consumer without receiving a used battery in return.

Tractors—A list of approved standard models of industrial power trucks which manufacturers are permitted to produce was issued August 15 in accordance with Order L-112, issued July 10, establishing strict control of the production of industrial power trucks for handling material in and around factories, warehouses, docks, airports and depots. After August 15, no manufacturer shall begin the manufacture of any standard model which is not an approved standard model.

Typewriters—Order L-54-a, as amended and issued August 4, stops the manufacture of typewriters completely on October 31, except for a relatively small number to be produced for government agencies by the Woodstock Typewriter Company. Portable typewriter production was stopped July 31. The amended order continues complete allocation control over new typewriters, all of which are reserved for the Army, Navy and Maritime Commission.

Watches—General Limitation Order L-175, issued August 7, permits watch manufacturers to sell or deliver railroad standard watches only to the Army; to railroad employees who are required to carry them and have none; and to fill certified orders from dealers or wholesalers for replenishing stock.

Prices

Alloy steel—Amendment No. 7 to Revised Price Schedule No. 49 on resale of iron and steel products, effective September 4, besides providing ceiling prices for less-than-carload quantity sales at the warehouse and jobber level of new low-alloy emergency steels developed to conserve molybdenum, nickel and chrome, makes revisions in prices of a number of iron and steel products, including pipe in Western States and heavy gage boiler and pressure tubes. The prices for the new low-alloy steels reflect approximately the same percentage markup over cost of the material that is customary on other types of alloy steels handled by steel warehouses. The amendment provides that the maximum prices it establishes for less-than-carload quantity sales of the new low-alloy steels shall be applicable to any alloy steels whose specifications were not used in production by mills on April 16, 1941, such as National Emergency Specifications and American Iron and Steel Institute Specifications of alloy grades, but not including carbon steel or tool steel grades. Maximum prices for cutting and threading pipe and tubular products are established at levels in effect by jobbers April 16, 1941. Where the mill does the cutting and threading, the warehouse shall not charge more than mill extras for such operations. All sellers of pipe and tubular products must file by September 16 the cutting and threading charges which were used on April 16, 1941. Specific maximum delivered prices for heavy gage boiler and pressure tubes permit a lower markup than those in effect on April 16, 1941. On shipments from warehouse stock, maximum prices on heavy gage boiler and pressure tubes shall be the lowest price resulting from the combination of mill carload basing point prices and less-than-carload freight from the basing point to the destination of the customer, plus the markup of 35 per cent for shipments of 30,000 to 39,999 lb. or ft.; 40 per cent for 20,000 to 29,999 lb. or ft.; 50 per cent for 10,000 to 19,999 lb. or ft.; 55 per cent for 5,000 to 9,999 lb. or ft.; 65 per cent for 2,000 to 4,999 lb. or ft.; and 80 per cent for shipments under 2,000 lb. or ft.

Aluminum—A revision of Revised Price Schedule No. 2, effective August 20, establishes maximum prices for segregated solid aluminum scrap for aluminum drosses, skimmings, grind-

ings, sweepings, sawings and spatters, and reduces by one cent per pound maximum prices for all grades of obsolete scrap except pure cable. The revised schedule covers all secondary aluminum ingot and all aluminum scrap, except aluminum foil and light gage aluminum sheet which does not exceed 0.006 in. in thickness. Maximum prices for foil and the lightest gage sheet are provided by the General Maximum Price Regulation. Maximum prices for aluminum scrap established by the schedule, as amended, are listed.

Brass—A new maximum price regulation, No. 202, effective August 19, reduces the weighted average selling price of brass and bronze alloy ingots about 1.20 cents per lb. below the March, 1942, level. Maximum prices for the most important grades of brass and bronze ingots in carload lots established under the regulation, together with the maximums provided by the General Maximum Price Regulation and actual market prices prior to issuance of Maximum Price Regulation No. 202, are listed in the order.

Clay pipe—Manufacturers' price ceilings for vitrified clay sewer pipe and allied products were established August 18 for the Eastern, Southern and East Central areas of the country. Price Regulation No. 206 established as maximums for these areas approximately the highest prices prevailing in them for the period from October 1 to October 15, 1941. Separate schedules, separate lists of items and separate rules were set up for each of the three areas. The ceilings are approximately the same as those already in force under the General Maximum Price Regulation.

Coal—Adjustment upward of the maximum prices for run-of-mine and slack coal shipped on the Great Lakes from Western Pennsylvania, West Virginia and Ohio to conform with the ceilings previously established for all-rail shipments of these coals was announced August 10.

Fuel oil—Amendment No. 23 to Revised Price Schedule No. 88 on petroleum and petroleum products, issued July 28, to grant relief from the maximum prices established in the petroleum and petroleum products schedules, provides that a seller may file applications for adjustment in accordance with Regulation No. 1, if it is shown that the established maximum price causes substantial hardship, is abnormally low in relation to the prices established for competitive sellers and that a maximum price more in line with competitors' prices will not cause an increase in retail prices. Amendment No. 30 to Revised Price Schedule No. 88, effective August 26, contains modifications of the maximum price schedule to encourage the maintenance of central storage facilities and to simplify methods of determining maximum prices for crude petroleum. It provides a revised method for determining the maximum price for a well not producing on October 1, 1941, the base price date, and permits the contract price to be paid for all production covered by a contract, regardless of whether the well was in production on October 1, 1941.

Idle material—Maximum Price Regulation No. 204, effective August 20, prescribes formulae to simplify the pricing of idle or frozen materials sold under Priorities Regulation No. 13. Wherever a specific dollars-and-cents maximum price exists which is applicable to the sale of idle or frozen materials by their present holder, the maximum price established by the regulation shall apply. No maximum price is provided for sales to the original supplier of the material or to another producer of the material on the grounds that the original supplier or other producer must resell at an established ceiling, thus avoiding any danger of a higher cost to any subsequent user. In the case of materials sold to any other authorized buyer, for which no specific maximum price in dollars-and-cents terms exists and which are sold in the same form in which they were originally purchased, the seller shall ascertain the maximum price which the original supplier is permitted to charge for the same or similar material and apply that maximum price to his sales. In cases where the original seller no longer exists or no longer sells the material in question, the seller of idle or frozen materials is permitted to charge a price not in excess of the actual delivered cost to him. Idle or frozen materials which have been fabricated, processed or altered so that they no longer are in the form in which originally purchased by the seller are put in two classes. In the first class are materials which have been fabricated or combined for further fabrication or assembly. In such cases, the regulation permits the seller to receive a price equal to his cost of materials and labor, plus the percentage markup which he would have received if he had been permitted to complete the fabrication. In the second class are materials which are not usable in their existing state in any currently permissible productive process. Since the fabrication or combination which has taken place possesses no economic value under present circumstances, these materials must be sold for scrap or salvage purposes. In the case of materials which are not usable and for which a definite maximum price for sale as scrap has been established by a maximum price regulation, that maximum price shall apply. If the materials are sold as scrap to industrial consumers and if there is no specific maximum price for their sale as scrap, waste or salvage, a maximum price equal to 80 per cent of the delivered cost of the material to the seller is allowed.

Iron and steel scrap—Amendment No. 7 to Revised Price Schedule No. 4, effective August 14, changes the provisions of Schedule No. 4 to co-ordinate the operation of the schedule with the allocation of scrap. The maximum unprepared price for light sheet iron, new clippings and the material from which galvanized bundles are made has been dropped from $2.50 to $4 per gross ton under the corresponding prepared bundle prices. On allocated shipments of railroad scrap from a railroad operating in a basing point to an off-line consumer, the new amendment allows the consumer to absorb the established transportation charges incurred in the off-line portion of the movement. This change is designed to protect the railroad from any reduction in realization as a result of complying with allocation orders. The amendment gives similar protection to railroads not operating in a basing point on allocated shipments to off-line consumers located farther away in terms of off-line transportation charges than the consumers who received the largest tonnage of such grade of scrap from the railroad during the base period, September 1, 1940—January 31, 1941. Railroads not operating in a basing point are permitted to pass on to the consumer the increase in the foreign line proportion of the through haul to an off-line consumer resulting from a rise in freight rates which became effective after March 14, 1942. Tube scrap is removed from the listed grades of the schedule and is now to be priced in the same manner as other unlisted grades superior to No. 1 heavy melting steel. Shipping points in Kansas and Nebraska where the maximum shipping point price is $13 per gross ton have been designated remote to facilitate the movement of light iron to balers on the preparation-in-transit basis.

Lumber—A detailed explanation of the proper method of invoicing sales of lumber where an average price is bid on a number of items of lumber of different specifications was issued on August 11. The average price is computed by applying a price not in excess of the ceiling to the footage of each item called for in the order. When the order is shipped, it usually occurs that each car does not contain the same proportion of each item which the entire order calls for, and sometimes the weighted average ceiling price for the lumber in a particular car is lower than the average price bid because of the high percentage of lower priced items in that car, while on other cars the average ceiling price is higher than the bid price. If each invoice shows the footage, etc., of each item separately and indicates that it is for a shipment which is part of a larger order, and that the price shown on the invoice is the average price for the entire order, it is permissible to invoice at the average price.

New material—Amendment No. 23 of the General Maximum Price Regulation, issued August 20, permits a seller who, during or prior to March, increased prices to all classes of purchasers of a commodity or service to make the increased prices his ceilings for each class of purchaser so long as he made delivery during March at the higher prices to any one of his classes of purchasers. However, if, after the general price increase, the seller delivered to a class of purchaser only at a lower price, the lower price is the maximum price unless the delivery was made under a contract. As a safeguard against use of the provision where a price increase was used merely for bargaining purposes, the amendment requires that delivery or supply must have been made during March to at least one class of purchasers. In providing a more direct method for the seller to determine ceiling prices to classes of purchasers with whom the seller did not deal during March, 1942, the amendment makes clear that the seller should first attempt to set his ceiling prices by applying his customary differentials between classes of buyers. If a seller did not have a differential of a customary amount between a class of sellers with whom he dealt in March and one with whom he did not deal in that month, he must adopt the ceiling price and the differentials of his most closely competitive seller.

Pig iron—An amendment to Revised Price Schedule No. 10, issued August 15, gives a new method of adjusting delivered pig iron prices on shipments from Buffalo, N. Y., when made by rail to points to which shipments before the war moved by barge or barge and rail. The maximum price is the sum of the basing point price at the governing basing point, any allowable differentials, the usual transportation charges from the basing point to the point of delivery and the amount by which the all-rail freight rate exceeds the charges for barge or barge and rail transportation to the place of delivery.

Scrap rubber—Amendment No. 2 to Revised Price Schedule No. 87 covering scrap rubber, issued August 1, permits payments of the premiums above ceiling prices formerly allowable in cases where the contract for sale was made before June 26 and the former premium requirements are fulfilled.

Smithing coal—Amendment No. 11 to Revised Price Schedule No. 120 covering bituminous coal, issued July 27, establishes maximum prices for smithing coals delivered from the mine by all persons, including distributors. The amendment restores the operating margins by permitting the addition to the established maximum price of an amount not in excess of the weighted average margin which the individual distributor realized on similar sales between October 1, 1941, and December 31, 1941.

Typewriters—All sales of used typewriters by individuals or firms, even though not regularly engaged in the sale, rental or repair of typewriters, are governed by Maximum Price Regulation No. 162, it was announced August 28. The announcement was made to clarify the provision of the regulation which classifies the sale from an individual to a typewriter dealer as a wholesale transaction. Such a sale may not be made at a price which exceeds two-thirds of the retail price. Amendment No. 4 to Revised Rationing Order No. 4 was clarified on August 25 to ban the rental of new typewriters and used non-portable machines manufactured since January 1, 1935, and to order the return by September 15 of typewriters manufactured subsequent to that date which are now on loan. Persons eligible to purchase machines under existing regulations are not affected by the order.

Rochester Has Railroad Exhibit

An exhibit of railroad historical material, including contributions from the New York Central and Baltimore & Ohio, is now in progress at the Museum of Arts and Sciences at Rochester, N. Y., where it will continue through September 21. Railroad motion pictures are shown each afternoon, and exhibits prepared by local model railroad clubs also are on display.

TIME TABLE "MYSTERIES" EXPLAINED—Writers and cartoonists who long have made the variety of signs and symbols used in railroad time tables the butt of amusing comment may find recent Seaboard Air Line "folders" more to their liking, because one page is devoted to a breezy introduction to this to them mysterious art, entitled "How to tackle time tables the easy way," while the usual tabular explanation of characters is now explained under the heading, "Key to the Seaboard's picture language."

News Department continued on next left-hand page

"... the war load has fallen almost in its entirety on the railroads. Now the load on the railroads is in excess of anything in their history; and, with the gradual passing of waterway, highway and airway transportation, the peak load prospects of the railroads appear far in excess of any peak load ever anticipated."

M. W. Clement, President
Pennsylvania Railroad
Address delivered June 15th at
dedication of new Technological
Institute, Northwestern University.

The FRANKLIN SYSTEM of Steam Distribution AND THE LOCOMOTIVE BOOSTER

*Trade Mark Registered U. S. Pat. Off.

With locomotive builders almost wholly engaged in the production of vital war material, only the very minimum amount of new power can be expected by the railroads to help them carry these unprecedented tonnages. The logical solution is increased capacity of existing power.

The Franklin System of Steam Distribution, through increased mean effective pressure, provides at least a third extra train load-speed capacity. The Locomotive Booster* aids materially in starting heavier loads and accelerating to road speeds.

This combination for existing locomotives will provide increased capacity throughout the entire operating range.

FRANKLIN RAILWAY SUPPLY COMPANY, INC. NEW YORK CHICAGO

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GENERAL NEWS

Tank Cars Need Spring Snubbers

Application approved to stop train partings caused by car bounce

The A.A.R., Mechanical Division, reports that the subject of spring snubber application to tank car trucks was considered at a conference in Chicago on August 12 of representatives of the American Petroleum Institute, the A.A.R. Committee on Couplers and Draft Gears, the Arbitration Committee, the Committee on Tank Cars, the A.A.R., Car Service Division, local railroad mechanical committees from loading and destination areas for tank car movements to the Eastern seaboard, and a number of other representatives of tank car operators.

At this conference, the matter of train partings causing extensive delays and hazard to trains of tank cars was thoroughly discussed, also tests recently conducted by the Committee on Couplers and Draft Gears to develop the cause of these train partings. The instruments records of these tests showed graphically the bounce of tank cars when not equipped with snubbers and in comparison with other types of cars, and supported the conclusion that this car bounce due to harmonic spring action at speeds above 40 miles an hour, is the principal cause of train partings. In these same tests it was brought out that the condition of uncoupling rigging is also a contributory cause for train partings.

After thorough consideration, the conference unanimously approved a proposition to apply spring snubbers to all tank cars not now so equipped, as rapidly as the material can be made available and in the national interest, with particular reference to providing an uninterrupted flow of petroleum products to the Eastern seaboard. The Mechanical Division has issued a circular requiring the application of snubbers to all tank cars and asked the individual car owners to indicate their willingness to support the snubber application program and permit railroads to apply snubbers which will be billed for on the basis of charges and credits specified in the interchange rules.

Records maintained by a number of railroads are said to show that, in addition to train partings, the next most prolific cause of shopping of tank cars and resultant loss of car days is broken truck springs and the application of spring snubbers will materially reduce this truck spring breakage and also this cause of loss of car days.

Spring snubbers are to be applied by tank car owners whenever a tank car reaches their shop tracks for any repairs; by tank car owners at loading or unloading points, either by their own forces or a delegated agency; or by railroad companies whenever a tank car is on their car repair tracks. Tank car owners may notify railroad companies of their preference in one-two-three order of types of snubbers desired and railroads should comply with this so far as material in stock will permit. Substitution of recognized types of snubbers is permissible; tank cars that are equipped with snubbers should be so stenciled at both ends of cars; and charges and credits should be on a basis of the A.A.R. rules.

The matter of obtaining such spring snubbers for tank car trucks has been taken up with the War Production Board which advises that, in order to obtain this material, the car owners should apply on a PD-1A form for the necessary preference rating. In making such application to the War Production Board, it is suggested that the following uniform answer be given to Explanation No. 2 on this form:

"These snubbers required to help eliminate delays in movement of tank cars due to trains parting and shopping enroute on account of broken truck springs. Tests have developed that application of snubbers will eliminate this trouble to a large extent and permit greater utilization of tank cars. This program is sponsored by the Association of American Railroads, American Petroleum Institute, Office of Defense Transportation and Office of Petroleum Co-ordinator."

Retirement Act Amendment

Senator Davis, Republican of Pennsylvania, has introduced S.2753, a proposed Railroad Retirement Act amendment which would provide for the payment of annuities up to the day of the annuitant's death. Under the present law no annuity is paid for the month in which an annuitant dies.

Annual Meeting of Short Line Association

The twenty-ninth annual meeting of the American Short Line Railroad Association will be held October 8 and 9 at the Atlanta-Biltmore Hotel, Atlanta, Ga., according to the announcement sent out last week by President J. M. Hood. Director Eastman of the Office of Defense Transportation will be the speaker at October 9's luncheon session, while other sessions will be addressed by J. B. Hill, president of the Louisville & Nashville; Colonel W. J. Williamson, chief, Traffic Control Division, War Department; Andrew Stevenson, chief, Transportation Equipment Branch, War Production Board, and Bert C. Bertram, salvage director—railroads, WPB.

Holiday Travel Heavy in East

Increases vary locally, but are in line with results of recent months

In anticipation of record-breaking passenger business over the Labor Day week end, Eastern railroads made all serviceable equipment ready and provided additional facilities at many stations to accommodate unusual crowds. Early estimates of the results indicate that the volume of travel was great enough to surpass all existing figures on some lines, but on others it apparently did not exceed previous records. This situation is explained by some observers in part by their belief that passenger business just before and just after the holiday period was heavier than usual in many instances—suggesting that railroad advertising messages urging travelers to avoid week end rushes are bearing fruit—and in part by evidences that travel movements have not been affected uniformly in all sections by the abnormal wartime conditions to which the increases are generally attributed. In some localities, for example, a large part of the population is employed in war industries that did not observe the holiday this year, so smaller increases in railroad business were reported at such points than at others where the local conditions are different.

Other special situations introduced unusual factors into the holiday travel comparison with peacetime years. The Labor Day traffic between New York and Atlantic City and Philadelphia and Atlantic City, for example, in ordinary years runs into big figures, for which special one-day and week end excursions are largely responsible. This year no special rates or excursion trains were available, and preholiday advertising was designed to discourage such travel. Moreover, most of the large Atlantic City hotels have been taken over by the U. S. Army, so that accommodations for visitors at the resort are considerably reduced. Altogether these conditions acted to restrain the demand for transportation to and from that point so that it was, according to preliminary estimates, probably no greater than in 1941. As less equipment was available to handle it, however, some trains were reported to be crowded. On Monday a number of trains arriving at the metropolitan terminals were deadheaded back to the shore, so that a shuttle service was maintained to accommodate the peak movement.

By contrast with this situation, travel in and out of Washington and New York was reported to be much heavier than in pre-

vious recent years on most lines. In 1941 several railroads serving New York and New England experienced an abnormally large holiday passenger business—due in part to reports of an alarming gasoline scarcity widely circulated at that time—yet the figures for 1942, when they become available, are expected to show a very substantial rate of increase over last year. This is true in spite of the fact that no special excursions were operated this year and that organized travel from children's summer camps was, unlike 1941, moved almost entirely apart from the holiday business. The volume of travel into New York on the Friday and Saturday of the holiday period showed a greater relative increase over last year, estimates indicate, than the outbound business, and conversely the outbound movement on Monday was greater in proportion than it was inbound.

While estimates of the number of passengers handled at the principal New York stations during the holiday period range up to 50 per cent over the corresponding 1941 record, comparison with previous records made this year shows that such increases have been experienced in through travel right along through the summer, and that holiday travel at New York increased little, if any, more over last year than has regular daily travel, apart from commuter business. In August of this year, for example, the New York Central handled 778,525 through train passengers in and out of Grand Central Terminal, an increase of 54.5 per cent over the 503,851 handled in August, 1941, a result closely in line with estimates of the holiday increase on that road. Suburban trains on the New York Central carried 1,649,547 passengers in and out of Grand Central Terminal in August this year, an increase of about 27 per cent over the 1941 month.

Other lines connecting New York with interior points report comparable increases. On the Lackawanna the gain over 1941 or the Labor Day period was 46.1 per cent. On this road as on others entering New York the movement this year differed considerably from that in previous recent years in two respects. First in that a much larger relative increase was shown in travel to New York than away from that city at the beginning of the holiday, and second in that business was more evenly distributed over the whole week end, showing much less tendency than usual to develop sharp peaks on Saturday and Monday evenings and an equally pronounced lull on Sunday.

Early estimates suggest that the largest increase over 1941 among railroads serving New York was perhaps shown by the Pennsylvania, particularly on the New York-Washington line, on which a steadily rising percentage of increase over last year has been reported all through the summer. In pre-war times the peak passenger movement on this line came when Presidential inaugurations occurred. Late in 1941 these record figures were surpassed, however, and holiday periods this year have consistently been accompanied by new high figures. In August, however, the regular week-end travel in and out of Washington exceeded the best holiday records, and on one Saturday in that month approximately 115,000 passengers were carried on this line in and out of the Capital, a figure more than 75 per cent above the old Inauguration Day record. A corresponding increase is reported to have been experienced on the Labor Day week-end, when around 300 extra trains and sections were operated in and out of Pennsylvania station, New York.

Great Lakes Advisory Board to Meet September 16

The fifty-fourth regular meeting of the Great Lakes Regional Advisory Board will be held at Toledo, Ohio, on September 16. The morning business session will be highlighted by a discussion of the national transportation situation by L. M. Betts, manager of the Railroad Relations Section of the Association of American Railroads, and an address on the national scrap salvage campaign, by Clayton Grandy, director of the Industrial Salvage Section of the War Production Board. At a joint luncheon of the Board and the Toledo Transportation Club, M. J. Gormley, executive assistant, A.A.R., will speak on war transportation.

Club Meetings

Officers for the next year will be nominated at a meeting of the Railway Club of Pittsburgh, to be held at the Fort Pitt Hotel, Pittsburgh, Pa., at 8 p. m. September 24. Bert C. Bertram, Salvage Director for Railroads, War Production Board, will speak on "Rails in the Spotlight."

The Traffic Club of Newark, N. J., also will hear the report of a committee selected to nominate officers for the next year when it meets at the Robert Treat Hotel, Newark, at 8 p. m. September 14.

The Southern & Southwestern Railway Club will meet at 10 a. m. September 17 at the Ansley Hotel, Atlanta, Ga., at which time F. C. Hasse, general manager of the Oxweld Railroad Service Co., will speak on "Flame Hardening in the Railroad Field."

Western Lines Move Heavy Labor Day Traffic

Although handicapped by a lack of cars due to the assignment of passenger train equipment to military use, Western railroads on September 4-8, successfully moved a volume of Labor Day travel which greatly exceeded that of last year. While the movement was handled with fewer cars than are normally available, the entire operation was outstanding in that it was accomplished simultaneously with a heavy military movement.

In spite of warnings discouraging holiday travel, people flocked to the railroads and were willing to stand in the aisles of cars. This was particularly true at Chicago where the railroads handled a "more than capacity" business which necessitated the doubling back of much equipment. Sleeping cars, like coaches, were limited in number for civilian movements and all Pullman accommodations were utilized. It was the first time in 20 years that unoccupied uppers in rooms, drawing rooms and compartments were sold separately on a large scale.

The heaviest travel occurred between New York, Washington, St. Louis, Mo., and the Twin Cities, Cleveland, Ohio, Detroit, Mich., and Chicago. However, unlike previous years, few extra sections of trains were operated during this year's Labor Day movement. St. Louis-Chicago trains, which certain railroads considered discontinuing a few months ago, carried a record business. Chicago-Twin Cities trains were well loaded, the Hiawatha of the Chicago, Milwaukee, St. Paul & Pacific carrying 625 passengers on one train of 10 coaches and three parlor cars.

Local business on the New York Central showed a much heavier increase than the through business. This was particularly true between Chicago and Cleveland, Ohio, Cincinnati, Detroit, Mich., Battle Creek and Indianapolis, Ind. The unusual feature of the New York Central's traffic this year was its continuation beyond Labor Day. Its eastbound Pacemaker was sold-out on each day from September 3 to 8. Its eastbound Twilight Limited carried 1,400 passengers on two sections on September 7.

Nickel Plate Stockholder Files Additional Complaints

Thomas L. Little, a stockholder of the New York, Chicago & St. Louis, has filed with the Interstate Commerce Commission two complaints in addition to those noted in the *Railway Age* of August 29, page 351, charging that the Nickel Plate is being deprived of its lawful revenues due to the erroneous computation of divisions with other railroads.

In one case Mr. Little alleges that the Southern, Illinois Central, St. Louis-San Francisco, and the Louisville & Nashville have been overpaid by the Nickel Plate to the extent of $211,000 on unlawful divisions of rates on cotton seed oil and its products, copra and its products, and vegetable oils and meals.

In the other case the charge is made that the Chicago, Rock Island & Pacific; Missouri Pacific; Illinois Central; St. Louis-San Francisco; and St. Louis Southwestern have been overpaid by the Nickel Plate in the amount of at least $875,000 on divisions of rates on cotton from the southwest.

The complainant asks that the cases be investigated by the commission and that the defendant carriers be required to cease the alleged unlawful division arrangements and repay the Nickel Plate the $1,086,000 which it is charged is due to it.

Rock Island Gets Certificate for Contractor-Operated Route

Reversing the findings of its own prior report, Division 5 of the Interstate Commerce Commission has now granted the Chicago, Rock Island & Pacific a certificate under the Motor Carrier Act's "grandfather" clause, covering common-carrier trucking operations on a Kansas City, Mo.-St. Joseph route for which the certificate had previously been granted to the Rock Island's contract trucker—Crooks Terminal Warehouse, Inc. The issue as to whether the certificate should go to the railroad or the contractor was the same as that decided by the full commission when

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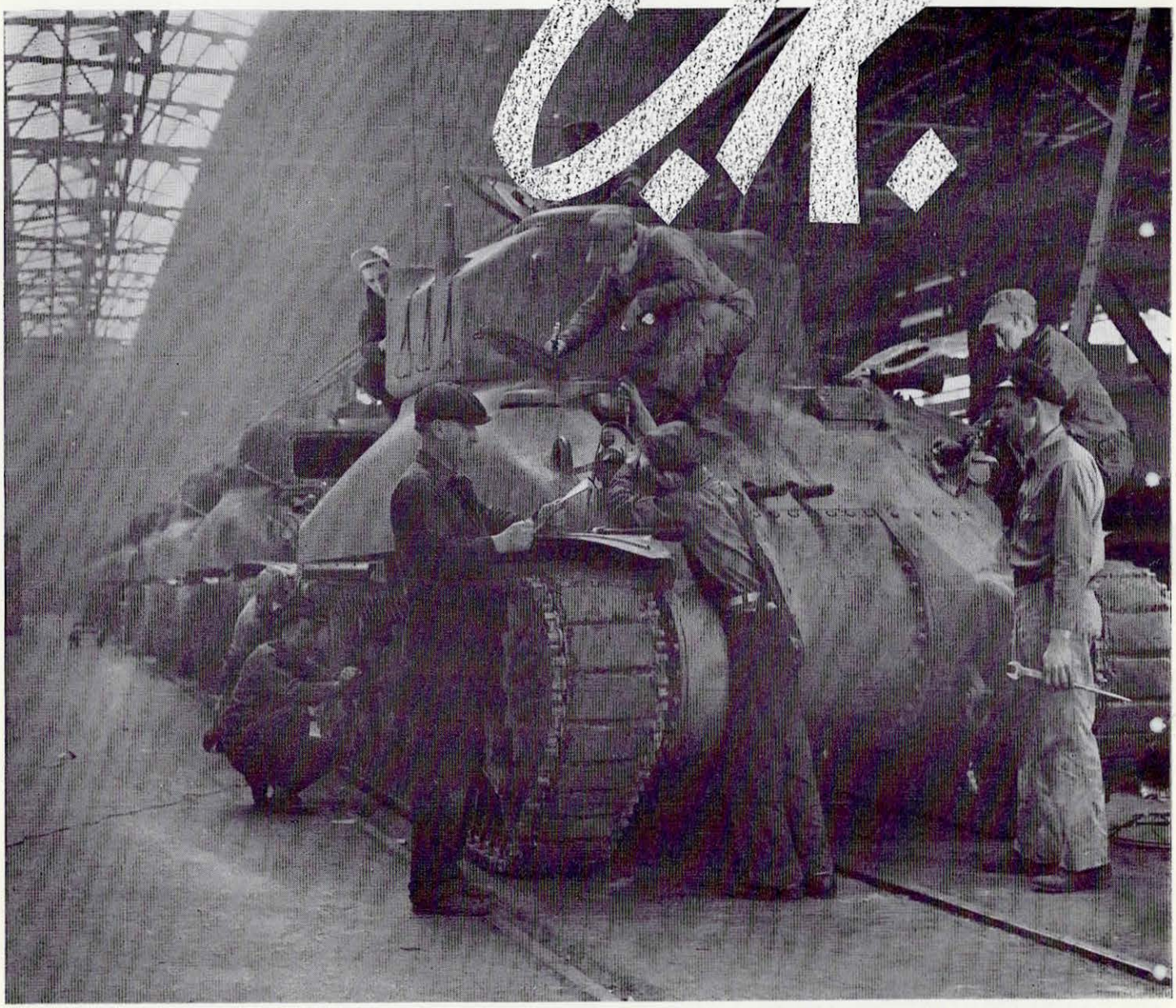
LIMA PUTS ITS O.K.



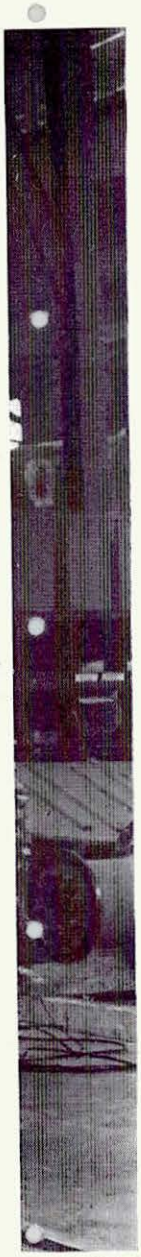
Final Inspection of M-4 Tank in Lima Tank Arsenal

Between 25,000 and 30,000 individual units must be made and assembled in the building of one of these M-4's. While Lima workmen turn out the finished tank, workmen in some 600 plants in all 48 states contribute to the completed job.

The production of M-4's in the Lima tank arsenal may form a more spectacular, but not necessarily more important, contribution than is now being made by the Lima locomotive shops which will provide some 250 locomotives this year.

Nothing takes the place of a workman's pride and interest in his work. To the workers in Lima's tank arsenal, these M-4's are "our tanks". One of the first of "our tanks" shipped to England was loaded with cigarettes contributed by the men.

....ON THIS K.O. FOR THE AXIS!



Lima was the first to put the Army's new streamlined M-4 medium tank in production. And Lima-built M-4's — dubbed Gen. Shermans by their battle crews — were the first of this type to go into action.

For 73 years railroad men have known what the Lima "O.K." means on a locomotive in terms of soundness of design, quality of materials, and precision of workmanship. Lima's "O.K." on these 30-ton land cruisers — built to absolute interchangeability of all parts to expedite manufacture and servicing — is evidence of the same care and pride in craftsmanship, and a warranty of the highest degree of efficiency and dependability today humanly possible to build into a medium combat tank.

LIMA LOCOMOTIVE WORKS, LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

All photos courtesy of OWI.

it recently reversed Division 5 and granted the Boston & Maine Transportation Company certificates covering the bulk of its trucking services which on the "grandfather" date had been operated by an independent contractor (see *Railway Age* of September 5, page 382).

The Division 5 which reversed itself in the Rock Island case was comprised of Commissioners Lee, Rogers, and Patterson, the first of whom dissented in part in the B. & M. case while Mr. Rogers dissented. The B. & M. decision is not cited in the Rock Island report which found the "preponderance of evidence" in favor of taking the certificate from Crooks and giving it to the railroad. The title case is No. MC-69298, Crooks Terminal Warehouse, Inc., Contract Carrier Application.

Truck Minimums Must Not Exceed Capacity of Vehicles

Motor carrier minimum weights in excess of the capacity of a vehicle have been condemned by the Interstate Commerce Commission in a report affirming the prior decision of Division 3 in the I. & S. No. M-1216 proceeding, which involves rates on rugs and matting from the East to Western Trunk Line territory. The commission struck down a proposed 30,000 lb. minimum "in the absence of a showing of dissimilar circumstances and conditions" as compared with those surrounding the handling of traffic from shippers tendering 20,000 lb. at one time.

It did this despite the fact that railroad protestants had withdrawn their objections to the truckers' proposal after the latter had agreed to publish in the tariffs a rule to the effect that the 30,000 lb. "must be received at and transported from the point of origin from one shipper in one day and one bill of lading." The commission recalled that when it sanctioned the multiple-car railroad rate on molasses from New Orleans, La., to Peoria, Ill., and Pekin, there was a showing that railroad operating costs per 100 lb. would be less when a single consignment of approximately 38 carloads was transported at one time in a single train, than when the commodity was transported in a single carload. "The record herein," the report went on, "does not show the costs incurred in handling 30,000 lb. or 20,000 lb. of linoleum, and, under the theory of the motor carriers, if competition exists between the rail and motor carriers, such costs are immaterial."

With respect to the latter, the commission later had this to say: "The existence of competition between motor and rail carriers does not relieve either type of carrier from according shippers reasonable rates, nor does it render lawful unlimited discriminations and prejudices. The competition between rail and motor carriers for linoleum traffic does not constitute such a dissimilarity in circumstances and conditions as to render legal the proposed discrimination."

The commission was mindful of the fact that it has previously approved certain linoleum rates subject to a 30,000 lb. minimum. It recalled, however, that its report in that connection "expresses our doubt as to the propriety" of such a set-up which would require more than one unit of equipment. "That report," said the commission, "was issued over a year ago and now we are convinced that not only were our doubts as expressed therein well founded, but that for the future we shall follow the policy announced in the prior [Division 3's] report herein with respect to minimum weights in excess of the loading capacity of the equipment customarily used by the motor carriers."

Commissioner Lee wrote a brief dissenting-in-part expression, while dissents of Commissioners Rogers and Alldredge were noted.

Freight Car Loading

Carloading reports were so delayed by the Labor Day holiday that the Association of American Railroads had not announced the total for the week ended September 5 when this issue went to press.

As reported in last week's issue, loadings of revenue freight for the week ended August 29 totaled 899,419 cars, and the summary for week, compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For Week Ended Saturday, August 29

District	1942	1941	1940
Eastern	163,485	186,463	153,689
Allegheny	194,670	202,796	162,829
Pocahontas	56,533	59,033	52,253
Southern	123,680	122,167	103,451
Northwestern	152,458	151,655	132,455
Central Western	134,716	131,291	113,139
Southwestern	73,877	59,315	50,959
Total Western Districts	361,051	342,261	296,553
Total All Roads	899,419	912,720	768,775
Commodities			
Grain and grain products	47,463	43,536	37,333
Live stock	16,392	12,462	16,168
Coal	167,981	170,369	138,428
Coke	13,885	13,439	11,595
Forest products	54,686	47,750	38,637
Ore	88,529	76,548	69,290
Merchandise l.c.l.	91,157	158,311	153,660
Miscellaneous	419,326	390,305	303,664
August 29	899,419	912,720	768,775
August 22	869,404	899,788	761,108
August 15	868,845	890,337	743,050
August 8	849,752	878,505	727,073
August 1	863,528	882,022	717,927
Cumulative Total, 35 Weeks	28,732,521	27,727,539	23,454,918

In Canada.—Carloadings for the week ended August 29 totaled 66,241, as compared with 67,162 a year ago and 65,652 in the preceding week, according to the compilation of the Dominion Bureau of Statistics. Grain loading is following a different pattern than in normal years. The loading has been relatively heavy up to the first of August, but the usual peak for the latter part of August and September is not developing.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Aug. 29, 1942	66,241	37,121
Aug. 22, 1942	65,652	36,666
Aug. 15, 1942	64,245	35,259
Aug. 30, 1941	67,162	29,883
Cumulative Totals for Canada:		
Aug. 29, 1942	2,223,949	1,163,986
Aug. 30, 1941	2,060,586	1,023,599
Aug. 31, 1940	1,803,441	851,433

Philadelphia Shipyard Keeps Freight Cars Moving

The Cramp shipyard of Philadelphia has been cited by national transportation officers as foremost among shipyards in the country in rapid and efficient unloading of railroad cars and releasing these cars for use elsewhere. The record established here was made public in a letter from ODT Director Joseph B. Eastman, in which he said, "The reports show that a total of 2,530 carloads of material have been received since the plant resumed operation in 1941 and that not a single car remained under load beyond the free time permitted by the demurrage tariffs. This is an outstanding achievement." J. J. Pelley, president of the Association of American Railroads, brought this record to the attention of Admiral Land, chairman of the U. S. Maritime Commission, in a letter in which he complimented the shipyard on behalf of the railroads, and suggested that it would be helpful to pass the record along to other yards. Complimentary expressions also were received from Commissioner Johnson of the Interstate Commerce Commission, and from Homer C. King, director of the Commission's Bureau of Service.

Cramp officers explained that the record had been made possible by a complete reorganization of the production lines when the yard was rehabilitated. The old method of shifting materials back and forth was abandoned, and a "streamlined" system was established, so that all incoming raw material is received and unloaded at one end of the yard. From there it proceeds, step by step, from one production center to the next, without cross-movements.

Kendall Seeks Data on Car Supply for Livestock Traffic

Noting that "considerable concern has been expressed with respect to the adequacy of the stock car supply for the fall and winter movement of livestock," W. C. Kendall, chairman of the Car Service Division, has called upon all roads to survey the situation and report thereon to him. Mr. Kendall's analysis indicates that the chief problem will concern the movement of hogs, the expected movement of cattle being "at least no more than last year," while the sheep movement "should be no greater than normal."

The pig crop, however, was this spring 24 per cent over last year in the corn belt states. And in view of the government's program "to increase supplies of pork products for our allies," the result will be that "marketing of hogs this fall and winter will be increased at least to the extent of the increased crop, and probably to an even greater degree." Thus Mr. Kendall anticipates that the railroads may be called upon to handle around 30 per cent increased stock car loadings.

This, he said, "will require more intensive usage of the stock car supply than has been necessary for many years." He went on to point out that compared with last year the supply of serviceable stock cars has increased only one per cent, adding that "even if a reduction is secured bringing bad order stock cars down to the general average, the supply will be only about three per cent greater." Hence, the Car Service Division chairman's request for reports from all roads on the following points:

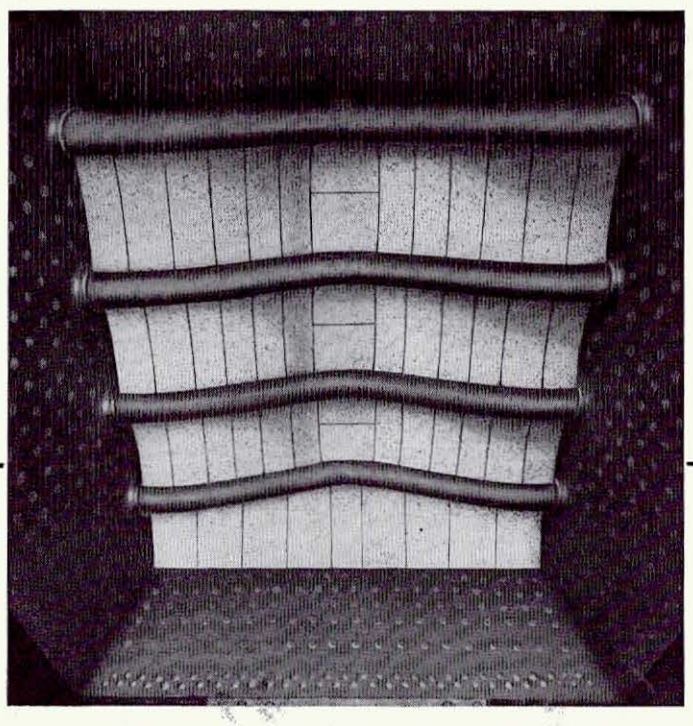
1. Will your stock car supply be adequate to protect your anticipated requirements for the coming six months
2. If not, what preparations are you making to

News Department continued on next left-hand page

A CORRECT BRICK ARCH GUARANTEES

FULL FUEL ECONOMY

There is a carefully worked out design of the Security Brick Arch for every class of locomotive . . . This design guarantees maximum efficiency both as to fuel economy and hauling capacity . . . In modernizing existing power and in maintaining locomotives in active service, be sure the correct brick arch design is installed and be sure it is completely maintained.



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SECURITY ARCHES
Than Just Brick

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

AMERICAN ARCH CO.
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60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

supply the deficiency? To what extent will private line stock cars be available for your use?

3. What is your supply of double-deck cars, and to what extent do you contemplate the installation of temporary decks to make doubles out of single-deck cars?

4. Are your local loading facilities in good shape, and do you have double-deck loaders at your hog shipping points?

5. Any other pertinent information that will assist in the determination of the question: Will the railroads be able to supply sufficient stock cars to protect loading requirements during the period of peak marketing?

Monthly Comment of I. C. C. Bureau of Transport Economics

Reviewing revenue and traffic figures in the latest issue of its Monthly Comment on Transportation Statistics, the Interstate Commerce Commission's Bureau of Transport Economics and Statistics notes that total operating revenues for the 12 months ended July 31, 1942, were but three million dollars lower than the gross for the 12 months ended July 31, 1929. Freight revenue in the 1941-1942 period was above that of 1928-1929 by 382 million dollars, but passenger revenue was 174 million dollars less, because the level of fares was 34 per cent lower.

Analyzing the July figures, the Bureau pointed out that gross for that month was 37 per cent above that of July, 1941, the gains ranging from 65.3 per cent in the Southwestern region to 17.5 per cent in the Northwestern region. Freight revenue was up 31.5 per cent, and passenger revenue 94 per cent, the greatest gains in the latter being in the Southwestern and Southern regions, with respective increases of 182.3 per cent and 135.2 per cent. The operating ratio for July was 58.7. This is the lowest reported for any month in the monthly-basis records of the Bureau of Railway Economics, Association of American Railroads, which run back to 1911.

With respect to carloadings the I.C.C. Bureau said that "if the sharp decline in l.c.l. cars loaded is considered, it is not certain that the peak loading of all cars for 1942 will be as large as it was in 1941." It added that "this does not imply, however, that there may not be a shortage in certain types of cars."

Commenting on truck loadings, the statement noted that for the first quarter of 1942, the 1,001 Class I intercity motor carriers reporting to the I.C.C. showed an 8.3 per cent increase in tonnage over the same quarter of 1941. "This," it went on, "compares with an increase of 13.4 per cent in tonnage reported by a sample of 215 carriers filing reports with the American Trucking Associations, Inc." A "preliminary and incomplete tabulation of uncorrected returns" from 1,031 common and contract truckers which reported to the commission for this year's second quarter "indicates a 1.4 per cent decrease in tons carried"; whereas the 208 motor carriers reporting to A.T.A. for the second quarter showed a 4.7 per cent increase.

The Bureau calculated that the net railway operating income of the Class I roads for the 12 months ended July 31, 1942, was at the rate of 5.97 per cent "of the par value of the stocks and long-term debt of these railways on December 31, 1941"; while the net income for the same period, after all fixed charges and provision for taxes, was equivalent to "8.13 per cent of the par value of their common and preferred stocks on December 31, 1941." Dividend appropriations in June totaled $9,756,000 compared with $7,744,000 for the same month of 1941, "the first time this year that dividends have exceeded those of the corresponding months last year."

The Bureau presented an analysis of the net income of Class I roads to indicate "the exceptionally rapid improvement in the general financial condition of the carriers." The analysis shows that in June only 14 roads reported net deficits, the aggregate being $1,081,000. In June, 1940, there were 72 net deficits aggregating $16,194,000. Another analysis covers freight locomotive performance, showing that in June, 1942, such locomotives hauled for each mile run 7.65 tons of cars and contents for each ton of locomotive weight. This compares with 7.27 tons for June, 1941; 6.66 tons for June, 1938; and 7.63 tons for June, 1929. Meanwhile, "the road passenger locomotives averaged more miles per day with practically no change in the speed of movement between terminals, but it was necessary to increase the number of helper and light locomotives relatively to the principal locomotive miles."

Looking over the accident statistics, the Bureau pointed out that accidents "continue to show an increase relatively greater than the increase in locomotive-miles and car-miles." For the first five months of 1942, the number of reportable train accidents increased 53.73 per cent; while locomotive miles, including motor train-miles, increased 15.92 per cent and all classes of car-miles increased 22.67 per cent. A tabulation of accidents by causes is interpreted as indicating that "the inexperience of new employees probably is an important factor in the increase in accident frequency in addition to the effect of traffic growth." The tabulation shows that for the first five months of this year, the accidents reported as due to "negligence of employees" increased 70.65 per cent over the comparable 1941 period. Increases attributed to other causes were all relatively less than the 53.73 per cent rise in the total number of accidents.

Canada Puts Labor Under Tight Government Control

Under wartime regulations that became effective September 1 throughout Canada a large proportion of the country's employers and workers come under direct control of the national Selective Service. Among the provisions that affect the individual's freedom of action is one that requires an employer to give at least seven days' written notice when laying off or discharging an employee. The worker likewise is required to give the same notice if he wishes to quit his job.

Employers cannot hire workers directly, but only through the employment offices of the Selective Service, and are not permitted even to interview applicants for work unless they present authorizations from that organization. Any person physically able to work who is unemployed for as much as two weeks can be required to

* * *

New York Central Employees Make a Present to the Army

A Martin, B-26 twin-engined bomber is presented to the Army Air Forces at the Glenn L. Martin plant in Baltimore, Md., August 31, by F. E. Williamson, president of the New York Central System, on behalf of the Central's 138,000 employees, who subscribed $170,000 for its purchase. Left to right, Mr. Williamson; C. D. Tilden of Cleveland, Ohio, one of the original group of subscribers; J. T. Hartson, vice-president of the Martin Company; Major Logie, who accepted the plane; Charles Hurd, chairman of the Martin War Production Drive Committee; W. H. Flynn, general superintendent, New York Central; L. W. Horning, manager of personnel New York Central; and Lieutenant Kelvin Orrison.

News Department continued on next left-hand page

WPB

(WAR PRODUCTION BOARD)

calls for *Extra* Steam

The steadily increasing railroad traffic demands "EXTRA STEAM".

Our railroads are obtaining this extra steam from their Elesco capacity increasing devices . . . without increasing fuel and water consumption.

It is important that there be no reduction of this "extra steam" due to improper maintenance of Elesco equipment.

KEEP 'EM ROLLING

WITH WELL MAINTAINED EQUIPMENT

A-1522

ELESCO

SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

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Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

take any full time job to which the local Selective Service office assigns him. Persons employed may be informed of opportunities to engage in what the Selective Service considers more essential work, but are not at present under compulsion to accept such suggestions. If a worker does shift his job at the government's suggestion he moves at public expense if the change involves a transfer to another city, and provisions are made for salary adjustments where the new job carries lower pay.

Certain exemptions are provided for farmers and farm laborers, but they are expected to accept seasonal employment in other lines when not engaged in farm work. Domestic servants, government employees, teachers and nurses are not subject to the new regulations.

Equipment and Supplies

All Cars in WPB 18,000 Program Are Released; Building Lags

During the month of August, the WPB granted releases covering the balance of the cars remaining in its 18,000-car quota, construction of which will complete the 1942 building program.

As of September 1, there were 14,275 cars authorized for 1942 construction yet to be delivered, including 965 remaining of the original 36,000 authorized by the former Supply, Priorities and Allocations board and 13,310 remaining of the additional 18,000 authorized by the WPB. Of the 965 left in the SPAB program, 601 are on order with contract car builders and 364 with railroad company shops, while the 13,310 left in the WPB program include 9,985 on order with contract car builders and 3,325 with railroad company shops. Deliveries under the programs are reported to be lagging seriously, especially in car building plants, due to continued materials' shortages.

FREIGHT CARS

WPB Releases More Freight Cars

The War Production Board has issued releases for the construction of the following freight cars:

Union Pacific—1000 gondolas—Pullman-Standard Car Manufacturing Co.
Denver & Rio Grande Western—780 gondolas—Pressed Steel Car Co.
Missouri Pacific—50 covered hopper—American Car & Foundry Co.
General Electric Co.—1 hopper—American Car & Foundry Co.
Dow Chemical Company—2 tank—American Car & Foundry Co.

THE MISSOURI PACIFIC has been authorized by the District Court to recondition 50 steel box cars for use as baggage cars for troop movements.

MOTOR VEHICLES

THE BLUE RIDGE TRANSPORTATION COMPANY, which affords co-ordinate bus service with the Potomac Edison Company, has received delivery of five 37-passenger motor coaches from the a.c.f. Motors Company.

THE DENVER, COLORADO SPRINGS & PUEBLO MOTOR WAY, which affords co-ordinate bus service with the Chicago, Burlington & Quincy and the Denver & Rio Grande Western, has received delivery of two 37-passenger motor coaches from the a.c.f. Motors Company.

SIGNALING

THE ELECTRO-MOTIVE CORPORATION has placed an order with the General Railway Signal Company for six intermittent inductive train control engine equipments for use on Diesel-electric freight locomotives for the Baltimore & Ohio.

Status of Freight Car Building Programs

SPAB 36,000 CAR PROGRAM—WPB 18,000 CAR PROGRAM

September 1, 1942

	Contract Car-Builders	Railroad Company Shops	Total
Number of cars in original SPAB program not yet delivered:			
Gondola	260	..	260
Hopper	89	364	453
Tank	252	...	252
Total	601	364	965
Classification of cars in WPB program:			
Flat	1,375	1,125	2,500
Gondola	4,106	2,690	6,796
Hopper	3,872	2,459	6,331
Covered Hopper	373	50	423
Tank	1,950	.....	1,950
Total	11,676	6,324	18,000
Number of cars in WPB program not yet delivered:			
Flat	1,372	962	2,334
Gondola	3,700	1,026	4,726
Hopper	3,023	1,287	4,310
Covered Hopper	373	50	423
Tank	1,517	.....	1,517
Total	9,985	3,325	13,310
Total backlog of cars on order and undelivered:			
Automobile	1,150	675	1,825
Box	8,078	4,113	12,191
Flat	1,372	962	2,334
Stock	.....	200	200
Gondola	6,825	1,161	7,986
Covered Hopper	398	75	473
Hopper	12,593	3,386	16,339
Tank	1,779	.....	1,779
Refrigerator	750	1,346	2,096
Caboose	25	370	395
Total	33,330	12,288	45,618
Number of total cars on order without WPB authority to build..	22,744	8,208	30,952

Note: Cars on order include additional releases of 245 cabooses and 146 refrigerator cars not chargeable against the SPAB or WPB quotas.

Supply Trade

The Kropp Forge Company of Chicago has been awarded the Army-Navy "E" pennant for production of war materials.

W. G. McFadden, has been appointed acting manager of the Chicago office of the **Allegheny Ludlum Steel Corporation** to replace **P. E. Floyd,** now serving with the government.

The Armstrong Bros. Tool Company will be presented with the Army-Navy "E" award for high achievement in producing war equipment at the company's factory, Chicago, on September 15.

R. J. Laidlaw has been appointed manager of the Cleveland, Ohio, district office of the **Worthington Pump & Machinery Corporation,** to succeed **A. J. Klug,** who has been assigned to special work with certain important industries in the Cleveland district. Mr. Laidlaw has been connected with the Worthington organization in various capacities since 1919.

The Army-Navy "E" burgee and lapel insignia were presented to the Hegewisch (Ill.) plant of the **Pressed Steel Car Co., Inc.,** by Brigadier General John K. Christmas, of the Office of the Chief of Ordnance, at ceremonies held at the plant on September 9. The award for excellence in the production of armored tanks and caterpillar guns was made by the Secretary of War on August 22.

The Army-Navy "E" burgee and lapel insignia were presented to the **Ohio Injector Company,** Wadsworth, Ohio, and its employees on August 26 for high achievement in Army-Navy production. The presentation, made by Captain Ross Pelton Schlabach, U. S. N., who represented the Secretary of the Navy, follows the announcement of the production award which was made by the Navy on July 26. The presentation ceremonies were broadcast over the Mutual Broadcasting System.

OBITUARY

Carl C. Gibbs, president of the National Malleable & Steel Castings Co., died suddenly at his home in Shaker Heights, Ohio, on September 9.

News Department continued on next left-hand page

OURS...and YOURS

WE INVITE you, Mr. and Mrs. America,
to share the honor of the Army-Navy Production Award
with the thousands of our loyal, skillful men
and women working on war orders in the office...
in the plant...and in the field.

SHARE IT with these workers...
you government officials who worked with them
closely, and with whole-hearted cooperation.

SHARE IT with them...you stockholders
who supported the early conversion of our plants
to war work, and approved our first efforts
to help our government.

SHARE IT with them...you men, women and children
who turned in sweat-stained bills...
checks that scraped the bottom of the bank account
...pennies from piggy-banks
...for Victory Bonds and Stamps.

ALL OF YOU gave your time, and effort, and money.

NOW, our government says that we spent well...
creating a tremendous volume
of the arms America urgently must have to win this war.

OUR HONOR is also your honor.
And this flag is also your flag.

UNDER IT, with your help, we intend to fight
the battle of production with still greater energy.

WE RATE it higher, and we'll fly it higher,
than any other flag in the U.S....

...except one.

AMERICAN LOCOMOTIVE

A NATIONAL ARSENAL OF MOBILE POWER

TANKS • GUN CARRIAGES • ARMY AND NAVY ORDNANCE • STEAM AND DIESEL LOCOMOTIVES

Financial

ATCHISON, TOPEKA & SANTA FE.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a branch line of railroad known as the Three Sands District, extending from Marland, Okla., to Lio, 9.9 miles.

BANGOR & AROOSTOOK.—*Refinancing and RFC Loan.*—This company has asked the Interstate Commerce Commission to approve a plan whereby it would borrow $4,000,000 from the Reconstruction Finance Corporation to meet the maturity of a like amount of five per cent mortgage bonds due January 1, 1943. The loan would run from January 1, 1943, to July 1, 1951. The issues which mature January 1, 1943, are $3,091,000 of first mortgage five per cent bonds; $703,000 of Piscataquis Division five per cent first mortgage bonds, and $206,000 of Van Buren extension first mortgage bonds.

CENTRAL VERMONT.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from Barre Junction, Vt., to South Barre, 3.5 miles.

DELAWARE, LACKAWANNA & WESTERN.—*Sued for Taxes by N. Y. L. & W.*—The New York, Lackawanna & Western, which leases trackage to the Delaware, Lackawanna & Western, filed suit on September 3 in the U. S. district court, Newark, N. J., seeking to compel the latter railroad to pay $965,937 in taxes and interest payments to N. Y. L. & W. stockholders. It is charged that the D. L. & W. agreed to pay all taxes on the leased property plus 5 per cent annual interest to the stockholders. The D. L. & W. is said to now deny the agreement.

DELAWARE & NORTHERN.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from Arkville, N. Y., to East Branch, 37.3 miles.

ERIE.—*Treatment of Northern of New Jersey Opposed and Defended.*—A protest against the treatment of the Northern of New Jersey and its subsidiary, the Nyack & Southern, by the Erie in the proposed plan of reorganization of the roads was issued by Cameron Blaikie, Jr., chairman of the board and vice-president of the Northern, on August 28. The statement of his opposition was issued in unique form, comprising 12 pages of text on coated paper illustrated with photographs and a map of the railroad's line. After a description of the Northern, its territory, business and history, Mr. Blaikie sets forth in some detail the claims asserted against, and by, the Northern; some notes on how the Erie does accounting for the Northern; the proposed plan of reorganization; some observations about the Committee of Attorneys in Fact; and, at the end, urges any stockholders that may have consented to the proposed Northern plan to rescind their approval.

Mr. Blaikie's contentions were answered on September 4 by C. L. Gonnet, secretary of the road, who declared that all the arguments advanced were disposed of by the U. S. District Court at Newark, N. J., which expressed the opinion that the proposed plan was fair, equitable and feasible.

ILLINOIS CENTRAL.—*Abandonment by the Yazoo & Mississippi Valley.*—Acting on the request of the Yazoo & Mississippi Valley, Division 4 of the Interstate Commerce Commission has dismissed, without prejudice, its application for authority to abandon a line of railroad extending from Silver City, Miss., to Holly Bluff.

LEHIGH VALLEY.—*Acquisition by the State Line & Sullivan.*—The State Line & Sullivan has been authorized by Division 4 of the Interstate Commerce Commission to acquire a line of railroad extending southerly from a connection with the main line of the Lehigh Valley at Towanda, Pa., to Monroeton, 4.7 miles.

MISSOURI PACIFIC.—*Asked to Retire RFC Loan.*—The executive committee of the Missouri Pacific has asked Guy A. Thompson, trustee, to repay the railroad's debt to the RFC in the principal amount of $23,134,800 plus interest of about $6,000,000 in order to reduce outstanding indebtedness and save heavy interest charges. Cash available for this purpose was said to amount to more than $50,000,000 and by the end of 1942 may exceed $70,000,000. It was believed the RFC might accept payment now at an interest rate less than the 6 per cent at which interest has been accruing since the loans were made in 1932 and 1933. Reduction of the interest rate to 4 per cent for the proposed immediate payment would save about $5,000,000 for the reorganized road and eliminate annual interest charges of $1,338,000.

MISSOURI PACIFIC.—*Abandonment.*—This company has been granted authority by Division 4 of the Interstate Commerce Commission to abandon the following lines:

1. Extending northeasterly from a point three miles east of Herrin, Ill., to the end of the branch, 2.2 miles.
2. Extending southeasterly from Pollard, Ill., to Marion, 6.5 miles.
3. Extending westwardly from Marion Junction, Ill., to the end of the line, 2.1 miles.

Abandonment by the Marion & Eastern.—The Marion & Eastern and the Missouri Pacific, respectively, have been granted authority by Division 4 of the Interstate Commerce Commission to abandon the following lines and the operation thereof:

1. From Marion, Ill., northeasterly, 1.5 miles.
2. Extending 2.2 miles from Paulton, Ill.
3. One and eight-tenths miles of track in Williamson County, Ill.

NEW YORK CENTRAL.—*To Seek Court Ruling on Liability for Leased Line's Taxes.*—The New York Central proposes to start suit to determine whether or not it is liable for income and excess profits taxes of the New York & Harlem, which owns the site and approach to the Grand Central station, New York, and which is under long-term lease to the New York Central. The tax clause of the contract of lease provided that the lessee would "pay all taxes, charges and assessments, ordinary and extraordinary, that may be imposed or assessed in any way on said railroad, branch, or property, or any part thereof, or upon or against the said party of the first part by reason thereof." It is the position of the New York Central that under the provisions of said contract of lease and supplemental agreements, it is not obligated to pay the income taxes and excess profits taxes, if any, imposed upon the Harlem. This position is, in its opinion, supported by numerous judicial decisions, including the recent case of United States vs. Warren Railroad in which the Circuit Court of Appeals held that rental payable by the lessee (the Delaware, Lackawanna & Western) directly to stockholders of the lessor (the Warren) was derivative in character and, inasmuch as such rental constituted income of the lessor company, such rental was liable for payment of income taxes of the lessor company.

PENNSYLVANIA.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon the following branches:

1. The Alexandria branch extending from New Alexandria, Pa., to Valuation Station 694 plus 39, 3.1 miles; and
2. The Dundale branch extending from a junction with the Alexandria branch south of New Alexandria, Pa., to a point 1,700 ft. from the junction.

SEABOARD AIR LINE.—*Florida Tax Settlement.*—The Seaboard has agreed to pay about $850,000 in back taxes to the state of Florida, to accept a $30,000,000 assessed valuation for 1942 and to pay current taxes in November, thus ending six years of litigation covering taxes levied as long ago as 1935. Special levies in counties and districts are still to be settled.

SILVERTON NORTHERN.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon its lines of railroad extending from Silverton, Colo., northeasterly to Eureka, 8.9 miles, and from Silverton, Colo., northerly to Gladstone, 6.9 miles.

UNION PACIFIC.—*Abandonment by the Oregon Short Line.*—The Oregon Short Line and the Union Pacific, respectively, have asked the Interstate Commerce Commission for authority to abandon the following lines and the operation thereof:

1. From Sugar City, Idaho, to Hinckley, 4.4 miles, and
2. From Ballard Junction, Utah, to Mile Post 2.95, three miles.

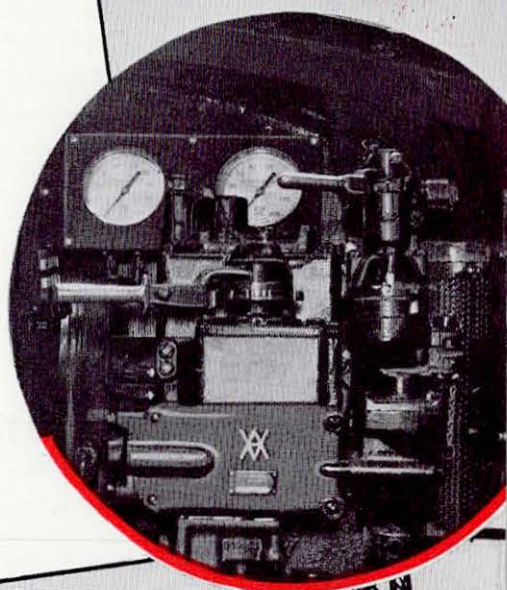
UNION PACIFIC.—*Abandonment by the Oregon Short Line.*—The Oregon Short Line and the Union Pacific, respectively, have asked the Interstate Commerce Commission for authority to abandon the Idaho-Northern branch and the operation thereof extending from Mile Post 99.73 to Mile Post 109.1, in Valley County, Idaho, 9.4 miles. At the same time the O. S. L. and

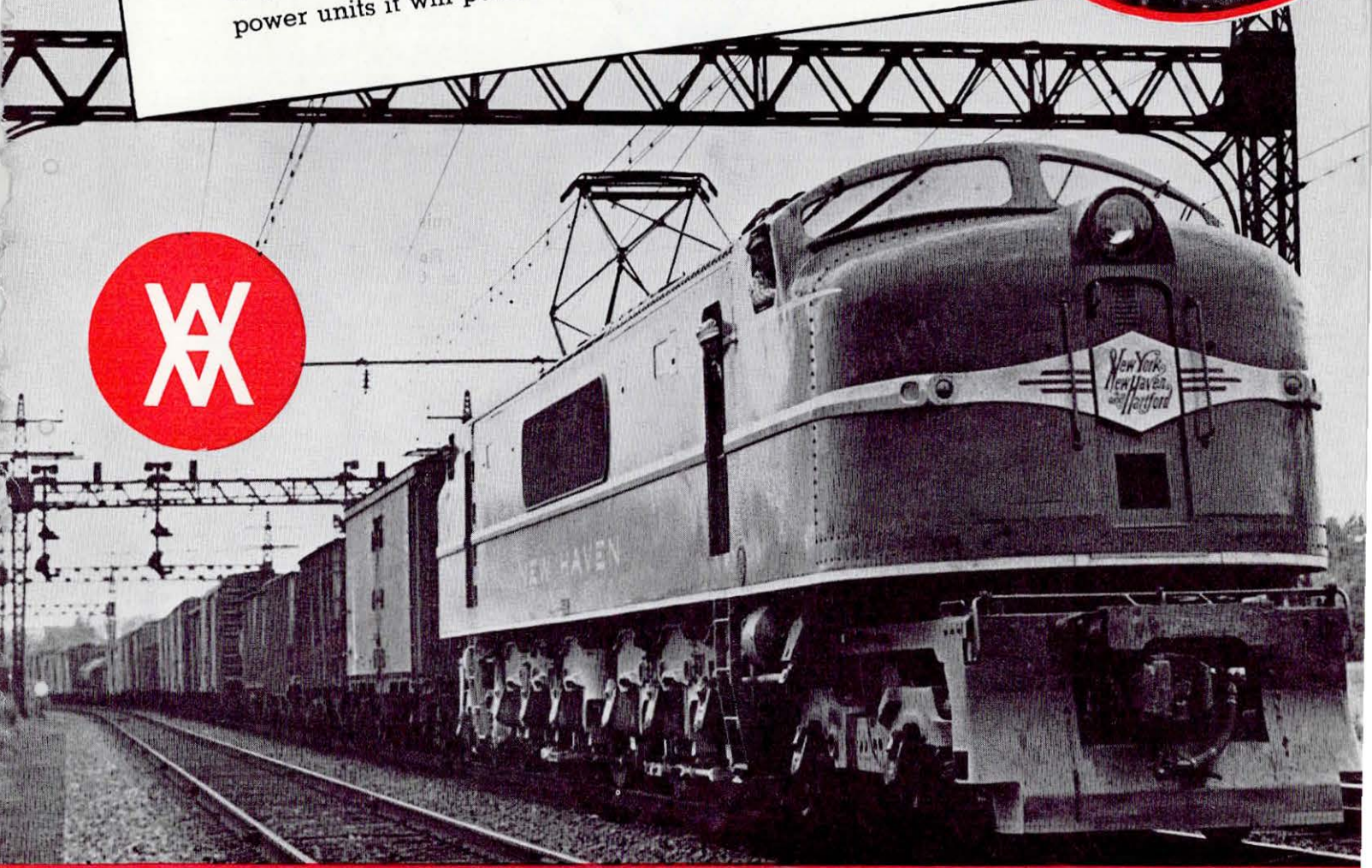
News Department continued on next left-hand page

More Helpers to Keep More Traffic Moving *Swiftly, . . Safely*

No. 8-EL Brake Equipments —

are installed on these new electric locomotives built for the New Haven road to increase its supply of power for wartime traffic needs . . . This brake has all those characteristics recognized as essential for modern conditions —adequate and flexible control—ease and convenience of manipulation—continuing integrity of performance— with the extra operating protection of a "safety control" feature . . . On hundreds of steam locomotives, and scores of electrics and Diesel-electrics, its merits as a means to help speed volume traffic safely, have been amply demonstrated. On these distinctive new motive power units it will perform a similar noteworthy service.





WESTINGHOUSE AIR BRAKE CO.

WILMERDING, PENNSYLVANIA

the U. P., respectively, have asked authority to acquire from the United States Government and operate a substitute line which is 4.2 miles longer than the line to be abandoned. The relocation of the line is necessary because of the construction of a dam in the vicinity by the federal government and the attendant flooding of the old line.

Average Prices, Stocks and Bonds

	Sept. 8	Last week	Last year
Average price of 20 representative railway stocks..	27.93	27.30	30.01
Average price of 20 representative railway bonds..	66.97	66.48	64.62

Dividends Declared

Boston & Albany.—$2.00, payable September 30 to holders of record August 31.

Chicago Great Western.—5 Per Cent Preferred, Initial.—62½¢, payable September 0 to holders of record September 19.

Lackawanna RR of New Jersey.—$1.00, quarterly, payable October 1 to holders of record September 4.

Pittsburgh, Ft. Wayne & Chicago.—Common, $1.75, quarterly, payable October 1 to holders of record September 10; 7 Per Cent Preferred $1.75, quarterly, payable October 6 to holders of record September 10.

Construction

WAR DEPARTMENT.—The U. S. Engineer Office at Charleston, S. C., has awarded two contracts both in amount less than $500,000 for the construction of spur tracks in South Carolina; one to the C. Y. Thomason Company, Greenwood, S. C., and the other to Pennell and Harley, Spartanburg, S. C. This office has also awarded a contract in amount less than $50,000 to the Gilbert Engineering Company, Inc., Statesville, N. C., for railroad drainage in North Carolina. The U. S. Engineer Office at Albuquerque, N. M., has awarded a contract in amount less than $500,000 to McGinnis and Grafe, Waco, Tex., for the construction of railroad tracks in Kansas and has also awarded a contract in amount less than $50,000 to F. D. Shufflebarger, Albuquerque, for an addition to a railroad spur in New Mexico. The U. S. Engineer Office at Rock Island, Ill., has awarded a contract in amount less than $500,000 to Deckert and McDowell, Chicago, for railroad construction in Illinois. The U. S. Engineer Office at Boston, Mass., has awarded three contracts, each in amount less than $50,000, as follows: to the Boston & Maine for the construction of a spur track in New Hampshire, to the Maine Central for the construction of a spur track in Maine and another to the Maine Central for a railroad track extension in Maine. Other contracts recently awarded, all of them in amount less than $50,000, are as follows: the U. S. Engineer Office, Memphis, Tenn., to Russell J. Reid, Birmingham, Ala., for the construction of railroad tracks in Missouri; the U. S. Engineer Office, Louisville, Ky., to Albert J. Horth, Jr., Indianapolis, Ind., for the construction of spur tracks in Indiana; the U. S. Engineer Office, Little Rock, Ark., to the Missouri Pacific for the construction of a railroad track in Arkansas.

Railway Officers

EXECUTIVE

Luther E. Hall, president and receiver of the Louisiana Southern, with headquarters at New Orleans, La., has been elected president. The receivership of this road terminated on July 31.

Joseph J. Biunno has been elected president of the Springfield & Southwestern, with headquarters at Newark, N. J., succeeding **Benjamin Schwartz,** of Mount Vernon, N. Y.

John R. Marra, whose appointment as executive assistant to the president of the Railway Express Agency at New York was reported in the *Railway Age* of September 5, began his express career at Utica, N. Y., in May, 1916. After service

John R. Marra

in the United States Navy during the first World War he returned to the express service at Albany, N. Y., later serving as chief clerk to the superintendent at Rochester, N. Y. In January, 1935, he was assigned to the president's office at New York, and in May, 1937, he went to Buffalo, N. Y., as operating superintendent. In October, 1940, he became superintendent of organization at New York.

Edward G. Smith, secretary and treasurer of the Union Pacific, with headquarters at New York, has been elected vice-president, secretary and treasurer, with the same headquarters.

The headquarters of **E. C. Crossett,** president, **A. R. Watzek,** vice-president, and **J. W. Watzek, Jr.,** vice-president and secretary of the Ashley, Drew & Northern, have been removed from Chicago to Crossett, Ark.

J. M. Perkins, vice-president of the Frankfort & Cincinnati, has been elected president and general manager, with headquarters as before at Frankfort, Ky., succeeding **William T. Fowler,** whose death on July 30 was reported in the *Railway Age* of August 8. **George L. Fowler,** auditor and general freight and passenger agent, has been elected executive vice-president and traffic manager, with headquarters at Frankfort. **Earle Fowler** has been elected vice-president and general counsel, with headquarters at Lexington, Ky.

Curtis B. Bennett, vice-president and secretary of the Cleveland Railway Company, Cleveland, Ohio, has been appointed assistant to the vice-president of the Chesapeake & Ohio, the New York, Chicago & St. Louis and the Pere Marquette, with headquarters at Cleveland.

FINANCIAL, LEGAL AND ACCOUNTING

H. Ray West has been appointed assistant secretary of the Norfolk Southern, with headquarters at Norfolk, Va. **C. C. Spencer** has been appointed auditor.

Joseph F. Mann has been appointed general counsel and **D. P. Kingsley, Jr.,** assistant general counsel of the Union Pacific, both with headquarters at New York.

W. Gillmann has been appointed assistant treasurer of the Union Pacific with headquarters at New York, a newly created position.

J. S. Fathman, assistant attorney of the Wabash, has been promoted to attorney, with headquarters as before at St. Louis, Mo.

Ralph S. Stephenson, statistician of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, has been appointed comptroller of the Chicago Great Western, effective September 1, succeeding **William H. Sievers,** whose death on June 19 was reported in the *Railway Age* of June 27. **G. T. Scott,** chief clerk to the comptroller, has been promoted to assistant comptroller. **P. J. Bloom,**

Ralph S. Stephenson

chief clerk of disbursements, has been advanced to auditor of disbursements. **N. A. Bell,** general bookkeeper, has been appointed general accountant, all with headquarters at Chicago. **O. F. Schroeder,** general accountant at Oelwein, Iowa, has been appointed chief disbursement ac-

News Department continued on next left-hand page

Always the Same

LESS STOCK TO REMOVE

DUE to perfect foundry control HUNT-SPILLER *Air Furnace* GUN IRON Castings are made very close to finished sizes.

This feature saves in many ways — saves material — reduces transportation costs and saves in the time and cost of machining.

The uniformity of HUNT-SPILLER *Air Furnace* GUN IRON makes possible the use of maximum cuts, speeds and feeds — there are no hard spots or sand holes — no danger of breaking the cutting tools or spoiling the job.

H S G I
Reg. U.S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Finished Parts
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

HUNT-SPILLER MFG. CORPORATION
V. W. Ellet, *President* — E. J. Fuller, *Vice-Pres. & Gen. Mgr.*

383 Dorchester Ave. *Office & Works* South Boston, Mass.

Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER GUN IRON
Air Furnace

countant, with the same headquarters, a change of title.

Mr. Stephenson was born at Oelwein, Iowa, on December 22, 1894, and entered railway service in July, 1912, as a timekeeper of the Oelwein Terminal division of the Great Western. He served in various clerical capacities until July, 1915, when he was appointed chief accountant at the Oelwein shops. He served in the United States Army during the first World War, being honorably discharged on May 14, 1919, as first sergeant, Company C, 13th Engineers (Railway). Mr. Stephenson returned to the Great Western as traveling accountant and in March, 1923, was transferred to the general accounting office as statistician. During the next few years, while so employed, he studied accounting and related subjects at Northwestern university, and in October, 1929, he was transferred to the president's office as chief statistician. In November, 1935, he went with the Chicago, Milwaukee, St. Paul & Pacific as special accountant in the finance and accounting department and was later promoted to statistician, assisting in reorganization matters and conducting special cost and other studies.

W. Brain, assistant auditor of the Missouri-Kansas-Texas, with headquarters at Parsons, Kan., has been promoted to auditor, with headquarters at St. Louis, Mo. **J. T. Stephenson** has been appointed assistant auditor, succeeding Mr. Brain.

C. W. Tilton, assistant general auditor of the Great Northern, has been promoted to general auditor, with headquarters as before at St. Paul, Minn., succeeding **Vernon P. Turnburke,** whose promotion to assistant to the president was reported in the *Railway Age* of September 5.

OPERATING

The jurisdiction of **A. H. Ryden,** superintendent of telegraph of the Kansas City Southern, with headquarters at Kansas City, Mo., has been extended to include the Louisiana & Arkansas.

G. A. Cameron has been appointed manager, dining car service, of the Southern Pacific Lines in Texas and Louisiana, with headquarters at Houston, Tex., succeeding **J. F. Stewart,** transferred.

B. O. Wedge, general superintendent of the Eastern district of the Union Pacific, has been appointed acting general manager of that district, with headquarters as before at Omaha, Neb.

R. C. Diamond has been appointed superintendent of the Indianapolis division of the Baltimore & Ohio, with headquarters at Indianapolis, Ind., succeeding **F. J. Kahle,** whose death on July 14 was reported in the *Railway Age* of July 18.

Alberto Garduno, superintendent of the Southeastern division of the National Railways of Mexico with headquarters at Tierra Blanca, Veracruz, has been transferred to the Jalapa division, with headquarters at Jalapa, Veracruz, and has been succeeded by **Rafael Martinez,** superintendent of the Cardenas division, with headquarters at San Luis Potosi. **A. Munoz Orea,** superintendent of the Jalapa division, succeeds Mr. Martinez.

D. R. Kirk, assistant terminal trainmaster of the Houston (Tex.) terminals of the Southern Pacific Lines in Texas and Louisiana, has been promoted to trainmaster at Houston. **C. D. Mayfield** has been appointed trainmaster at Victoria, Tex.

F. W. Stopinski has been appointed assistant superintendent of the Birmingham division of the Louisville & Nashville, with headquarters at Birmingham, Ala. The headquarters of **B. H. Harbin,** assistant superintendent at Mobile, Ala., have been transferred to Pensacola, Fla.

John F. Penny, sleeping and dining car agent of the Canadian National at Saskatoon, Sask., has been promoted to assistant superintendent, sleeping and dining car department, at Edmonton, Alta., succeeding **Henry Coley,** who has been transferred to Winnipeg, Man.

J. G. Tucker has been appointed trainmaster of the Texas & Pacific at Big Spring, Tex., with jurisdiction over the Baird subdivision, including the Big Spring yard. **D. E. Crouser** has also been appointed trainmaster at Big Spring, with jurisdiction over the Big Spring and Toyah subdivisions.

A. A. Christy, assistant to the superintendent of transportation of the Pacific Fruit Express, with headquarters at Chicago, has been appointed acting superintendent of transportation to succeed **R. B. Hoffman,** who has been appointed manager of the Refrigerator Car section of the Association of American Railroads.

R. D. Parish, terminal yardmaster of the Terminal Railroad Association of St. Louis, has been promoted to assistant superintendent, with headquarters as before at St. Louis, Mo., succeeding **Ernest G. Yehling,** who has accepted appointment as supervisor of rail terminals in St. Louis for the Office of Defense Transportation.

T. J. Anderson, a dispatcher of the Atchison, Topeka & Santa Fe, has been promoted to trainmaster at Clovis, N. M., with jurisdiction over the First, Second and Estancia districts of the Pecos division, exclusive of the Clovis and Belen terminals. **C. E. Martin,** trainmaster at Wellington, Kan., has been transferred to Clovis, with jurisdiction over the Clovis Terminal, Roswell and Carlsbad districts and **J. N. Landreth** has been appointed trainmaster at Wellington, succeeding Mr. Martin. **C. F. Abrams,** trainmaster at Clovis, has entered military service.

R. B. Hoffman, who has been appointed manager of the Refrigerator Car section of the Association of American Railroads, as reported in the *Railway Age* of September 5, was born in Chicago on February 3, 1885. He entered railway service in 1902 as a clerk in the accounting department of the Chicago, Burlington & Quincy, and from 1904 to 1908 was employed by Armour & Co., Swift & Co. and the Committee on Car Efficiency of the American Railway Association. In the latter year he returned to the Burlington as a car distributor in the office of the superintendent of transportation and later in 1908 entered the employ of the Pacific Fruit Express as a general clerk. In April, 1911, he resigned to enter business for himself and, after serving as traffic manager for E. L. Hasler, returned to the Pacific Fruit Express in October, 1914, as a clerk at Chicago. During World War I he organized reconsigning and division bureaus throughout the country for the Railroad Administration. In August, 1922, he was promoted to superintendent of transportation of the P. F. E., which position he has held until his recent appointment.

R. B. Hoffman

Rex E. Hallawell, assistant superintendent of the Los Angeles division of the Southern Pacific, with headquarters at Los Angeles, Cal., has been promoted to general superintendent of transportation.

Rex E. Hallawell

Grover C. Baker, assistant superintendent of transportation at San Francisco, has been promoted to the newly created position of passenger service across San Francisco bay succeeding **William B. Kirkland,** whose death on September 3 is reported elsewhere in these columns.

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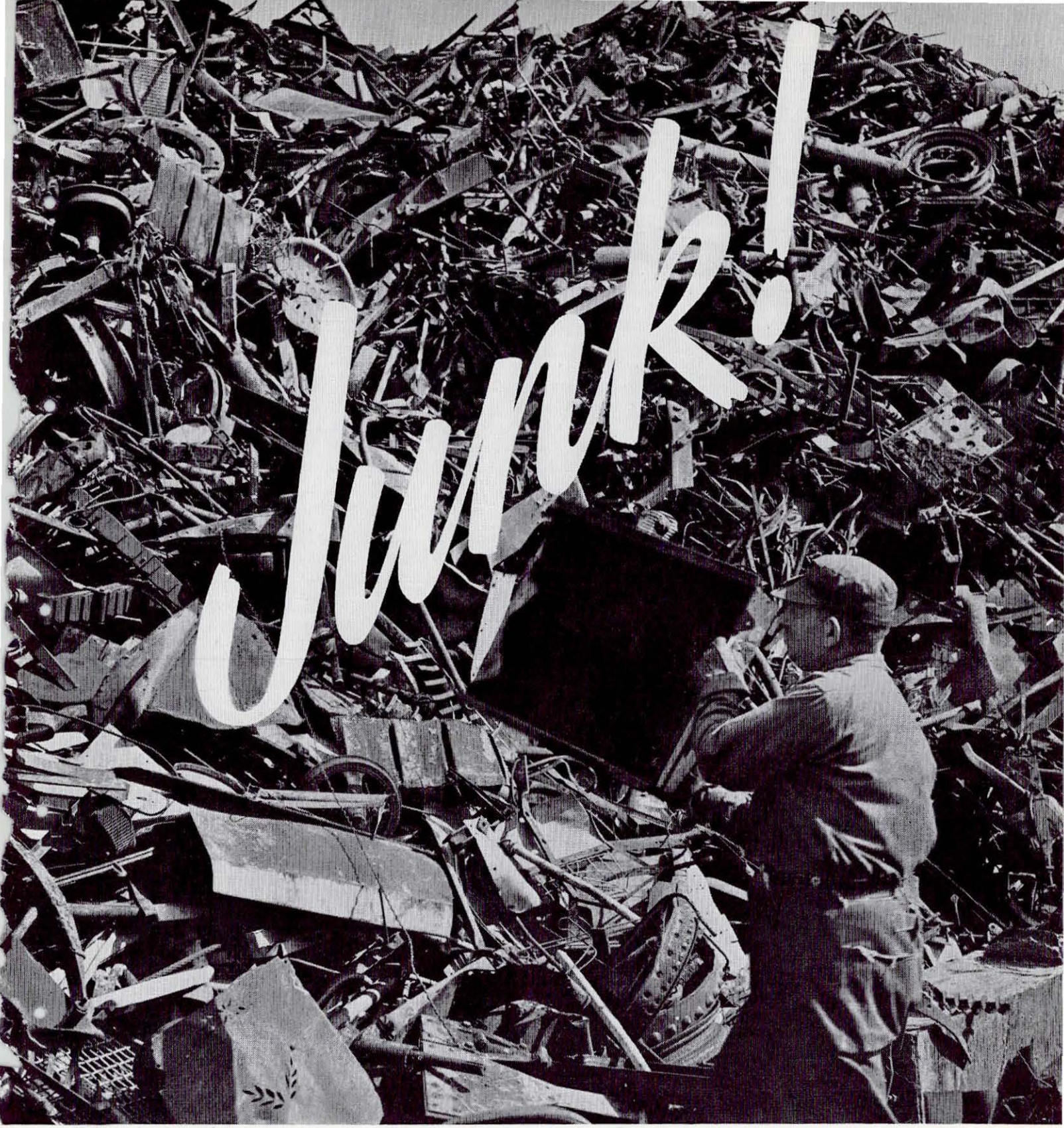


IT'S "JUNK" TO YOU••• — There's a harvest of scrap in your plant—obsolete dies, jigs, patterns and moulds; idle water tanks and their supports; scraps of rods, bars and other steel shapes . . . It's "junk" to you. But, it means Victory to America. Every pound of scrap brought back into the market boosts production of tanks, guns, planes and ships. You can launch your own salvage campaign without waiting for a community drive. Delegate one man to find every article of doubtful use around your plant and give him the authority to do a real salvage job. Get in the scrap . . . and do it now. ALAN WOOD STEEL COMPANY, Conshohocken, Pa.

superintendent of transportation, with the same headquarters.

Mr. Hallawell entered railway service with the Southern Pacific in 1914 as a clerk, subsequently serving as supervisor of transportation for the Northern district, chief clerk to the general manager, and, in 1938, manager of the Interurban Electric Railway. After the interurban passenger service across San Francisco bay was transferred from ferries to bridge trains, Mr. Hallawell was appointed assistant superintendent of the Southern Pacific's Sacramento division on August 1, 1940, and in April, 1942, he was transferred to the Los Angeles division.

Mr. Baker entered Southern Pacific service in 1918 as a telegrapher on the Tucson division and in 1936 became chief dispatcher of that division. In 1939 he was appointed assistant superintendent of transportation, with headquarters in San Francisco.

Jasper Simmons Riggan, whose appointment as assistant chief of personnel of the Seaboard Air Line at Norfolk, Va., was reported in the *Railway Age* of August 22, was born on November 11, 1898, at Macon, N. C. After attending high school and business college, Mr. Riggan entered the service of the Seaboard Air Line at Richmond, Va., as telegraph operator. In September, 1916, he became train dispatcher at Raleigh, N. C., and in February, 1918, he was appointed assistant chief dispatcher, becoming chief dispatcher in April, 1923. Mr. Riggan was appointed assistant trainmaster at Raleigh in October, 1925, again becoming chief dispatcher at Raleigh on January 1, 1928. He was appointed trainmaster at Savannah, Ga., in October, 1937, which position he held until his recent appointment as assistant chief of personnel.

William Manson, division superintendent of the Canadian Pacific at Regina, Sask., has been promoted to superintendent of transportation, Western lines, with headquarters at Winnipeg, Man., succeeding **H. J. Main,** whose promotion to general superintendent of transportation, with headquarters at Montreal, Que., was reported in the *Railway Age* of August 22. Mr. Manson has been succeeded at Regina by **N. A. Link,** as reported in the *Railway Age* of September 5.

Mr. Manson was born at Shoal Lake, Man., on August 28, 1892, and entered railway service on October 30, 1909, as a clerk on the Canadian Pacific at Winnipeg. On January 23, 1920, has was appointed car service agent at Moose Jaw, Sask., and three weeks later he was appointed chief clerk, car service, at Winnipeg. He later served as supervisor of weighing and refrigeration at that point and on September 20, 1926, he was promoted to trainmaster at Weyburn, Sask. Mr. Manson was advanced to assistant superintendent at Lethbridge, Alta., on February 1, 1928, later being transferred successively to the Winnipeg terminals and Calgary, Alta. On July 1, 1932, he was promoted to superintendent at Nelson, B. C., and on April 6, 1936, he was transferred to Calgary. Mr. Manson was transferred to Regina on March 1, 1936, where he remained until his recent promotion.

TRAFFIC

C. R. Sherwood has been appointed assistant traffic manager of the Quanah, Acme & Pacific, with headquarters at Quanah, Tex.

F. B. Rose, traveling freight and passenger agent of the Denver & Rio Grande Western at Dallas, Tex., has been promoted to district freight and passenger agent at that point, a change of title.

C. P. Varney, general agent, freight department, of the Chicago, Rock Island & Pacific at San Antonio, Tex., has been appointed executive representative at Washington, D. C.

George A. Leu, commercial agent of the New York, Ontario & Western at Chicago, has been promoted to general agent, with the same headquarters, a change of title.

Ray H. Bather, chief clerk of the divisions department of the St. Louis-San Francisco, has been promoted to assistant general freight agent, with headquarters as before at St. Louis, Mo.

W. P. Fallon, district passenger agent of the Chesapeake & Ohio at Cincinnati, Ohio, has been promoted to assistant general passenger agent at that point, succeeding **C. W. Haynes,** who has been transferred to Richmond, Va.

M. H. Greenleaf, general agent of the Great Northern at Spokane, Wash., has been promoted to assistant general freight agent at that point, a change of title. **A. L. Lauser,** traveling freight agent at Duluth, Minn., has been promoted to general agent at Sioux Falls, S. D., succeeding **Charles Vogel,** who has retired.

F. E. McGrath, assistant general freight agent and industrial agent of the Boston & Albany (New York Central system), has been promoted to general freight agent, with headquarters as before at Boston, Mass., succeeding **S. Lancaster,** resigned. **W. H. Naylor** has been appointed division freight agent at Worcester, Mass., succeeding **W. L. Wheat,** who has been appointed assistant general freight agent and industrial agent at Boston.

J. E. Andrews, assistant general traffic agent of the Norfolk Southern, has been promoted to general traffic agent, with headquarters as before at Atlanta, Ga. **W. A. Russell** has been appointed assistant general traffic agent at Atlanta. **W. V. Saggus,** general traffic agent at Atlanta, has been transferred to Augusta, Ga., succeeding **H. L. Glover,** who has entered the service of the United States Army. **J. L. Sammons** has been appointed assistant general traffic agent at Macon, Ga.

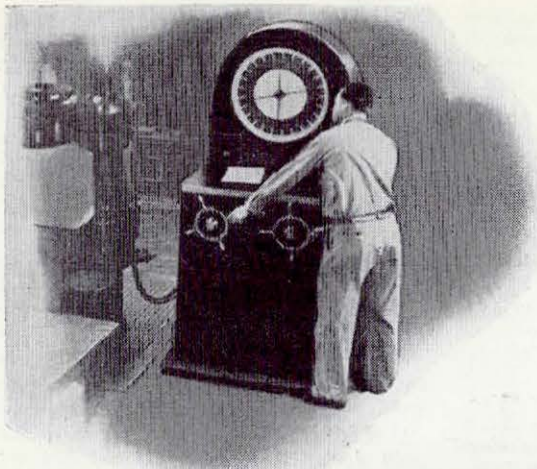
E. C. Champ, district freight agent of the Canadian National at Montreal, Que., has been appointed division freight and district passenger agent at North Bay, Ont., succeeding **George H. Bush,** who has been appointed division freight agent at Ottawa, Ont., to succeed the late **J. W. Sharpe. E. P. Cronk,** district freight agent at Windsor, Ont., has been appointed district freight agent at Montreal, succeeding Mr. Champ. **F. C. Broad,** traveling freight agent at Stratford, Ont., has been promoted to district freight agent at Windsor, succeeding Mr. Cronk.

Charles F. Bigelow, district passenger agent of the Southern at Miami, Fla., has been promoted to assistant general passenger agent at Asheville, N. C. **C. M. Hill,** traveling passenger agent at Jacksonville, Fla., has been promoted to district passenger agent at Miami, succeeding Mr. Bigelow. **O'Connor Wilson,** city passenger and freight agent at Asheville, N. C., has been appointed division passenger agent, with the same headquarters. **W. S. Hyman,** district passenger agent at Birmingham, Ala., has been appointed division passenger agent, with the same headquarters. **P. A. Jenkins,** district freight and passenger agent at Montgomery, Ala., has been appointed district passenger agent at Birmingham. **A. D. Fleming,** freight traffic representative at Montgomery, has been appointed district freight and passenger agent, with the same headquarters. **P. A. Schumpert,** traveling freight and passenger agent at New York, has been appointed district passenger agent, with the same headquarters.

Ambrose J. Seitz, freight traffic manager of the Union Pacific, has been promoted to acting general freight traffic manager, with headquarters as before at Omaha, Neb., succeeding **LeRoy T. Wilcox,** who has been granted a leave of absence because of illness. **Martin Holbrook,** office manager at Omaha, has been promoted to assistant to the vice-president-traffic, with the same headquarters, relieving **Carll C. Beach,** who has been appointed to the newly created position of assistant general freight traffic manager, with the same headquarters. **W. T. Burns,** freight traffic manager at Chicago, has been advanced to traffic manager at that point, a newly created position, and **A. G. Bloom,** general agent, passenger department, at Chicago, has been promoted to assistant traffic manager at Chicago. **John C. Pollock,** manager of the tour department of the Chicago & North Western-Union Pacific at Chicago, has been appointed general agent, passenger department, of the Union Pacific at Chicago, replacing Mr. Bloom.

Mr. Burns was born at Holyoke, Mass., on June 9, 1895, and entered the service of the Union Pacific in April, 1922, on which road he held various positions in the shops and store department. On June 21, 1923, he transferred to a clerical position in the purchasing department, and on March 16, 1926, he was assigned to special clerical work for the general freight agent at Omaha, Neb. On July 16, 1928, he was promoted to traveling freight agent with headquarters at Omaha, and on May 24, 1930 he was appointed freight traffic agent, with headquarters at Chicago. Mr. Burns was advanced to general agent, freight traffic department, with headquarters at New York, on May 1, 1935, and in November, 1938, he was promoted to assistant

News Department continued on next left-hand page



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GLOBE TUBES

freight traffic manager, with headquarters at Chicago. In March, 1940, he was advanced to freight traffic manager at that point, the position held until his recent promotion, effective September 1.

ENGINEERING & SIGNALING

C. T. Warren, division engineer of the Wabash at Decatur, Ill., has been promoted to engineer of track, with headquarters at St. Louis, Mo., succeeding **V. R. Hayes,** who has been appointed division engineer of the Ann Arbor, with headquarters at Owosso, Mich.

Warren L. Peoples, assistant engineer maintenance of way and structures of the Wheeling & Lake Erie, has been promoted to engineer maintenance of way and structures, with headquarters as before at Brewster, Ohio, succeeding **William Albert Roderick,** whose death on July 17 was reported in the *Railway Age* of July 25. Mr. Peoples was born at Bolivar, Ohio, on August 12, 1896, and graduated in civil engineering from Ohio Northern University in 1917. In 1913 and 1914 he worked as timekeeper of a railroad contractor at Nor-

Warren L. Peoples

walk, Ohio, and in 1917 he entered railway service as a transitman in the valuation department of the W. & L. E. From August, 1918, to January, 1919, he served as a sergeant engineer in the U. S. Army, returning to the W. & L. E. on the latter date as a transitman. Mr. Peoples was promoted to assistant engineer in 1924, to roadmaster in 1926 and to superintendent of bridges and buildings in 1927. The following year he was advanced to assistant engineer maintenance of way and structures, with headquarters at Brewster, which position he held until his recent promotion.

Ralph E. Patterson, whose appointment as chief engineer, construction and maintenance of the Lehigh Valley at Bethlehem, Pa., was reported in the *Railway Age* of September 5, was born on March 9, 1889, at Bangor, Me. Mr. Patterson received his bachelor of science degree in civil engineering from the University of Maine in 1911 and entered railroad service with the Lehigh Valley in October, 1912, in the engineering corps at Buffalo, N. Y. In April, 1916, he was appointed assistant division engineer at Sayre, Pa., being transferred to Buffalo the following month. He was promoted to division engineer in July, 1920, which position he held successively at Hazleton, Pa., Sayre and Easton. On August 1, 1937, Mr. Patterson was promoted to assistant to chief engineer at Bethlehem and on December 1, 1940, he became engineer maintenance of way. Mr. Patterson was appointed acting chief engineer, construction and maintenance, on June 1, which position he held until September 1, when he became chief engineer, construction and maintenance.

MECHANICAL

A. R. Nelson, superintendent of shops of the Union Pacific at Pocatello, Idaho, has been appointed master mechanic at that point.

Gomer D. Jones has been appointed master mechanic of the Southern Kansas division of the Atchison, Topeka & Santa Fe, a newly created position, with headquarters at Chanute, Kan.

Frank E. Russell, Jr., assistant superintendent of motive power of the Southern Pacific at Los Angeles, Cal., has been called to military service as a lieutenant colonel in the U. S. Army.

F. H. Cowan has been appointed supervisor maintenance of equipment of the Texas & Pacific, with headquarters at Dallas, Tex., succeeding **M. Wilkinson,** who has been appointed mechanical inspector at Dallas.

SPECIAL

A. J. McKenna has been appointed assistant chief special agent of the Southern Pacific, with headquarters at San Francisco, Cal., succeeding **Martin T. Dyer,** whose retirement on July 1 was reported in the *Railway Age* of July 25.

PURCHASES AND STORES

W. H. Post, assistant to the purchasing agent of the Northern Pacific, has been promoted to assistant purchasing agent, with headquarters as before at St. Paul, Minn., succeeding **C. E. Resler,** who has retired. **H. J. Harms** has been appointed assistant to the purchasing agent, succeeding Mr. Post.

Charles Samuel Argyle, assistant general storekeeper of the Western region of the Canadian National, with headquarters at Winnipeg, Man., has been appointed superintendent of stores, Prince Rupert drydock and shipyard, Prince Rupert, B. C. **Thomas W. Gillingwater,** regional stores accountant at Winnipeg, has been appointed acting assistant to the general superintendent of stores, Western lines.

Mr. Argyle was born at Leicester, England, on August 13, 1881, and entered the service of the Canadian Northern (now part of the Canadian National) at Saskatoon, Sask., in 1908, in the construction department. In August, 1909, he was transferred to the stores department at Wainwright, Alta., as a material clerk and held various positions at Saskatoon and Edmonton, Alta., until 1917, when he was appointed storekeeper at Edmonton. Mr. Argyle was later transferred successively to Transcona, Man., Fort Rouge, Man., and Saskatoon. In June, 1937, he was appointed assistant general storekeeper of the Western region, with headquarters at Winnipeg.

OBITUARY

William B. Kirkland, general superintendent of transportation of the Southern Pacific, with headquarters at San Francisco, Cal., died on September 3 at his home in Roseville, Cal., after a short illness. A photograph and biography of Mr. Kirkland were published in the *Railway Age* of April 11, 1942, page 775, following his promotion to general superintendent of transportation.

Luthene C. Gilman, who retired on January 28, 1937, as vice-president of the Great Northern, with headquarters at Seattle, Wash., died of a heart attack in that city on September 7. Mr. Gilman was born at Levant, Me., on January 28, 1857, and graduated from the law school of Columbia university. He located in

Luthene C. Gilman

Seattle in March, 1884, where he was admitted to the Washington bar in the same year. For a time he engaged in the practice of law and subsequently formed a partnership with James Hamilton Lewis, later United States senator from Illinois. Still later he served as city attorney of Seattle and in 1893 he was elected to the Washington State House of Representatives. In 1903, Mr. Gilman became western counsel for the Great Northern and after six years in this capacity he was transferred to St. Paul to become assistant to the president. In 1913, he was elected to the presidency of the Spokane, Portland & Seattle (now operated jointly by the Great Northern and the Northern Pacific), in which capacity he served until November 15, 1920, except for the period from June 20, 1918, to March 1, 1920, when he was district director for the Puget Sound district of the United States Railroad Administration. On November 15, 1920, he was elected vice-president of the Great Northern at Seattle, which position he held until his retirement.

Table of Operating Statistics Appears on Next Left-Hand Page

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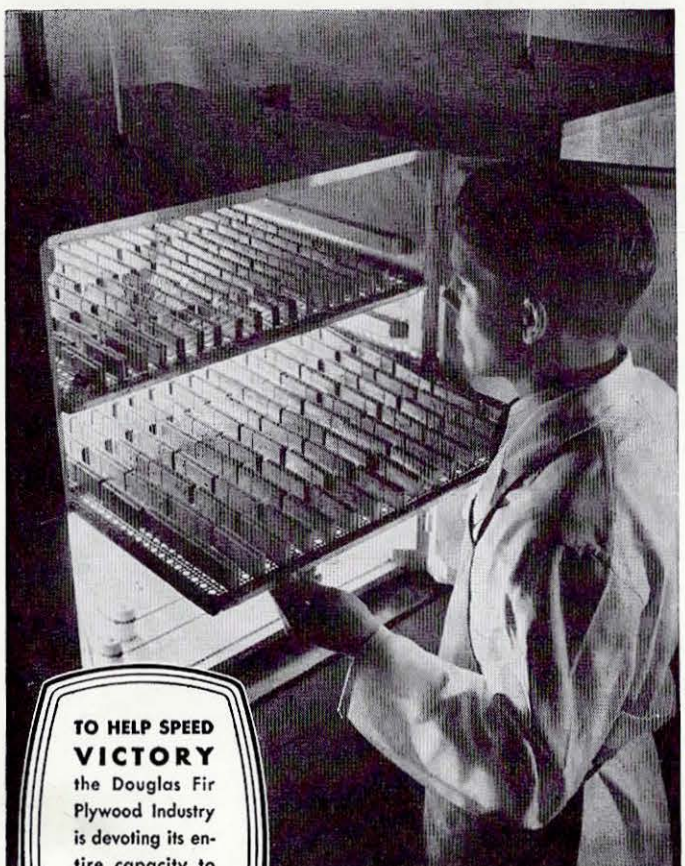

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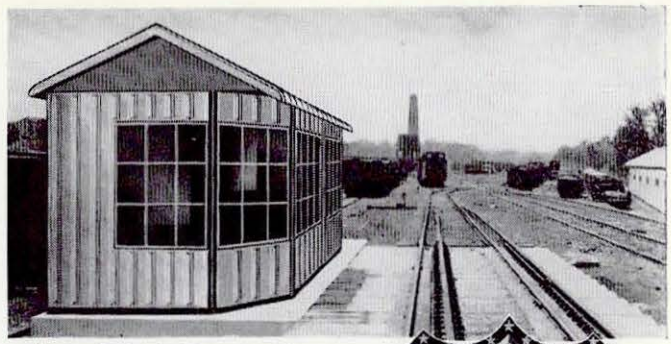

Above—Butler freight car scale house.
Below—Butler motor track car and tool house.

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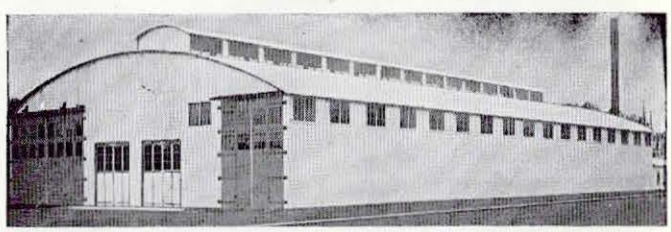
Below — Butler 40' x 160' x 22' railway car repair shop which survived a tornado.

At right—Lined interior of steam-heated 90'x200'x 22' Butler steel building housing fruit handling docks. (below) Loading and unloading cars within these modern docks protects perishable foods against winter and summer extremes.



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Freight Operating Statistics of Large Steam Railways — Selected Items

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excluding locomotives and tenders	Ton-miles (*thousands*): Net revenue and non-revenue	Number of road locomotives on line: Serviceable: Not stored	Number of road locomotives on line: Serviceable: Stored	Number of road locomotives on line: Unserviceable	Number of road locomotives on line: Per cent unserviceable
New England Region:												
Boston & Albany	1942	362	211,795	252,521	47,765	5,665	57.8	399,311	164,188	71	..	18	20.2
	1941	362	165,264	174,575	12,516	3,754	65.3	224,528	85,833	61	2	23	26.7
Boston & Maine	1942	1,853	388,687	453,315	48,528	13,204	63.1	885,464	387,290	160	2	11	6.4
	1941	1,894	322,529	370,411	35,075	12,488	69.6	711,666	282,007	133	..	35	20.8
N. Y., New H. & Hartf.†	1942	1,821	496,778	649,862	58,968	18,046	64.0	1,144,364	484,441	228	..	28	17.4
	1941	1,829	441,885	548,674	36,091	16,591	67.8	927,554	362,753	210	..	47	19.4
Great Lakes Region:												
Delaware & Hudson	1942	849	362,177	467,403	45,629	12,958	61.5	961,585	485,074	153	11	55	25.1
	1941	849	301,690	355,814	39,853	11,337	65.3	753,739	362,051	134	40	69	28.4
Del., Lack. & Western	1942	982	365,018	430,062	66,418	15,034	63.3	1,038,627	478,977	132	22	39	20.2
	1941	983	386,458	446,691	63,315	15,746	71.9	931,542	405,253	144	3	66	31.0
Erie	1942	2,251	883,682	946,684	65,180	36,759	62.0	2,618,582	1,095,089	298	12	96	23.6
	1941	2,257	809,806	857,811	54,882	36,822	67.9	2,265,896	908,842	256	11	158	37.2
Grand Trunk Western	1942	1,026	240,402	247,529	2,316	7,821	62.8	517,805	212,297	65	4	11	13.8
	1941	1,023	270,466	274,246	1,816	8,916	63.6	548,646	197,534	71	..	19	21.1
Lehigh Valley	1942	1,251	481,894	535,718	94,244	19,875	61.8	1,405,433	660,437	137	6	16	10.1
	1941	1,251	388,216	425,934	69,569	16,538	68.4	1,048,694	471,680	123	16	44	24.0
New York Central	1942	10,494	3,610,206	3,946,883	243,230	131,201	58.0	9,655,060	4,325,439	1,163	7	226	16.2
	1941	10,521	3,114,479	3,317,217	222,663	114,847	61.9	7,734,432	3,349,373	1,002	81	300	21.7
New York, Chi. & St. L.	1942	1,657	875,372	891,781	10,702	31,319	61.2	2,137,965	915,930	167	..	14	7.7
	1941	1,672	609,827	627,952	8,397	23,836	67.8	1,442,105	582,798	142	1	20	12.3
Pere Marquette	1942	2,021	378,892	390,489	8,907	10,732	61.5	750,140	330,379	140	..	21	13.0
	1941	2,068	400,106	415,498	9,691	11,660	66.7	721,109	292,298	127	1	25	16.3
Pitts. & Lake Erie	1942	233	108,196	111,259	45	4,553	62.7	400,199	235,539	49	2	12	19.0
	1941	232	100,241	104,015	270	4,387	64.7	370,693	216,787	41	..	17	29.3
Wabash*	1942	2,381	767,298	787,369	16,898	26,267	61.9	1,777,204	747,394	165	16	51	22.0
	1941	2,397	647,732	662,635	13,427	22,557	68.1	1,335,117	502,913	144	11	104	40.2
Central Eastern Region:												
Baltimore & Ohio	1942	6,213	2,398,454	3,017,198	333,480	76,625	59.6	5,696,640	2,698,905	905	11	218	19.2
	1941	6,245	1,924,673	2,421,783	247,963	64,795	63.6	4,478,635	2,084,696	800	89	243	21.5
Central of New Jersey†	1942	661	252,255	285,078	54,761	8,043	57.9	611,726	303,816	117	8	20	13.8
	1941	680	212,375	239,344	44,708	6,892	61.5	490,296	249,181	85	7	52	36.1
Chicago & Eastern Ill.	1942	925	205,034	211,230	5,149	5,458	64.5	369,609	170,157	58	..	10	14.7
	1941	925	181,329	181,904	3,119	5,069	68.0	306,673	129,355	60	4	27	29.7
Elgin, Joliet & Eastern	1942	392	144,484	146,351	1,201	3,923	63.6	307,312	161,640	68	..	11	13.9
	1941	390	127,829	129,224	1,224	3,535	60.5	275,307	139,476	68	..	9	11.7
Long Island	1942	374	30,245	31,462	19,973	309	52.7	24,482	10,429	42	1	4	8.5
	1941	375	28,955	30,265	18,912	307	53.1	23,026	9,177	31	9	8	16.7
Pennsylvania System	1942	9,952	4,793,497	5,667,752	713,892	178,873	59.8	13,156,175	6,192,204	1,997	8	154	7.1
	1941	9,960	3,950,164	4,685,205	566,509	154,808	63.9	10,646,659	4,945,781	1,689	20	437	20.4
Reading	1942	1,423	603,819	672,448	83,853	18,334	58.9	1,450,182	741,052	272	13	38	11.8
	1941	1,430	505,832	560,707	69,935	16,133	65.3	1,130,347	570,341	252	8	77	22.8
Pocahontas Region:												
Chesapeake & Ohio	1942	3,044	1,084,150	1,161,573	55,979	50,028	55.2	4,370,326	2,410,549	417	7	74	14.9
	1941	3,053	1,013,988	1,075,155	50,221	49,436	57.5	4,171,823	2,317,154	419	21	64	12.7
Norfolk & Western	1942	2,142	791,143	834,768	49,102	34,927	55.9	3,052,314	1,617,321	298	11	31	9.1
	1941	2,169	785,945	827,676	46,569	36,528	57.9	3,102,674	1,652,705	313	14	18	5.2
Southern Region:												
Atlantic Coast Line	1942	4,984	930,836	955,700	12,811	23,826	63.7	1,565,112	674,301	349	5	33	8.5
	1941	5,071	750,610	760,642	10,296	17,604	63.9	1,074,059	415,240	288	10	43	12.6
Central of Georgia†	1942	1,783	298,675	303,552	4,365	6,650	64.9	432,026	181,188	112	..	10	8.2
	1941	1,831	303,426	308,534	5,974	6,913	70.9	406,041	166,599	98	..	19	16.2
Gulf Mobile & Ohio	1942	1,959	339,301	424,243	5,678	11,738	69.1	747,736	345,003	107	2	8	6.8
	1941	1,962	263,986	307,906	3,668	8,590	68.5	515,697	215,677	87	9	14	12.7
Illinois Central (incl. Yazoo & Miss. Vy.)	1942	6,500	1,814,201	1,825,182	32,730	60,710	58.4	4,369,516	1,927,453	633	3	72	10.2
	1941	6,521	1,392,501	1,397,523	24,895	44,019	64.4	2,812,188	1,194,502	527	20	163	23.0
Louisville & Nashville	1942	4,789	1,633,351	1,781,459	47,856	39,281	58.1	2,940,795	1,418,166	420	1	52	11.0
	1941	4,794	1,421,076	1,543,652	37,958	36,454	59.8	2,580,714	1,215,172	386	18	55	12.0
Seaboard Air Line*	1942	4,232	898,047	984,768	11,711	23,435	65.2	1,554,863	699,618	276	..	43	13.4
	1941	4,298	720,014	760,368	4,669	18,450	64.6	1,145,647	461,768	246	..	56	18.5
Southern	1942	6,469	1,993,481	2,030,501	30,042	43,535	63.6	2,841,976	1,248,088	596	..	79	11.7
	1941	6,521	1,697,713	1,729,415	26,938	40,164	68.5	2,362,403	996,095	530	1	125	19.1
Northwestern Region:												
Chi. & North Western†	1942	8,262	982,246	1,022,197	21,279	31,075	63.7	2,177,920	947,787	343	31	155	29.3
	1941	8,305	919,684	949,378	20,121	30,389	65.3	1,931,301	805,308	309	20	233	41.5
Chicago Great Western	1942	1,447	266,562	270,819	6,000	7,849	63.9	524,102	215,163	72	2	11	12.9
	1941	1,447	265,486	268,078	4,682	8,378	64.4	523,266	197,064	65	4	12	14.8
Chi., Milw., St. P. & Pac.†	1942	10,813	1,368,696	1,437,242	59,151	43,944	65.9	2,993,787	1,388,289	458	77	81	13.1
	1941	10,847	1,371,865	1,431,096	58,035	43,448	62.1	2,867,823	1,189,276	449	32	118	19.7
Chi., St. P., Minneap. & Om.	1942	1,618	215,256	229,718	10,509	5,230	64.2	354,136	152,474	102	13	13	10.2
	1941	1,618	212,432	223,088	11,363	5,569	68.5	338,105	134,024	100	12	20	15.2
Duluth, Missabe & Iron Range.	1942	544	182,329	183,605	1,270	9,738	51.1	857,688	519,646	56	..	1	1.8
	1941	542	146,983	147,945	1,691	7,663	51.4	680,566	417,644	49	..	3	5.8
Great Northern	1942	7,982	1,071,104	1,070,136	33,017	41,568	64.9	3,111,165	1,591,610	366	29	85	17.7
	1941	7,978	979,059	970,858	29,199	36,715	62.3	2,696,187	1,266,763	347	41	119	23.5
Minneap., St. P. & S. St. M.†	1942	4,258	452,707	462,817	7,483	11,656	61.9	819,852	375,842	129	2	5	3.7
	1941	4,251	416,985	423,703	5,228	11,472	65.4	719,030	317,169	119	..	9	7.0
Northern Pacific	1942	6,593	871,012	931,025	66,323	33,420	72.3	2,196,478	1,066,244	337	42	62	14.1
	1941	6,422	780,914	831,413	52,200	28,582	67.4	1,803,826	762,575	342	33	54	12.6
Central Western Region:												
Alton	1942	915	273,798	302,194	1,078	7,301	65.4	488,706	216,308	68	1	4	5.5
	1941	915	229,015	254,435	1,072	5,620	64.5	340,801	135,882	68	..	9	11.7
Atch., Top & S. Fe. (incl. G. C. & S. F. & P. & S. F.)	1942	13,363	3,260,548	3,553,701	198,304	100,270	59.2	7,265,250	2,708,431	803	20	101	10.9
	1941	13,431	2,623,081	2,886,612	167,737	79,187	61.5	5,245,608	1,848,327	750	30	94	10.8
Chi., Burl. & Quincy	1942	8,888	1,290,327	1,355,358	50,869	42,164	64.6	2,894,692	1,337,463	435	8	78	15.0
	1941	8,924	1,197,417	1,242,146	51,888	39,159	67.2	2,464,104	1,047,714	418	18	104	19.3
Chi., Rock I. & Pac.†	1942	7,892	1,295,106	1,349,519	10,044	34,448	60.1	2,377,728	959,847	364	18	100	20.7
	1941	7,911	1,237,927	1,281,305	12,182	33,816	61.8	2,167,115	837,822	371	9	110	22.4
Denver & R. G. Wn.†	1942	2,422	408,912	468,670	63,773	12,918	70.6	839,555	401,986	155	16	22	11.4
	1941	2,547	290,237	326,258	39,636	9,107	71.5	561,518	251,739	131	22	29	15.9
Southern Pacific—Pacific Lines	1942	8,485	2,291,821	2,547,528	357,282	84,032	64.0	5,681,871	2,229,311	824	12	104	11.1
	1941	8,490	1,896,113	2,082,931	270,724	71,137	64.5	4,514,595	1,632,879	660	12	104	13.4
Union Pacific	1942	9,852	2,322,994	2,435,925	175,399	82,664	69.5	5,308,172	2,361,509	781	18	78	8.9
	1941	9,872	2,308,196	2,405,718	147,558	71,802	67.4	4,337,583	1,660,052	671	26	137	16.4
Southwestern Region:												
Mo.-Kans.-Texas Lines	1942	3,281	544,423	551,933	8,320	14,335	60.7	954,090	384,145	126	..	49	28.0
	1941	3,281	435,894	441,154	6,736	11,709	64.5	716,662	274,699	84	..	95	53.1
Missouri Pacific†	1942	7,102	1,699,762	1,761,925	38,032	53,492	60.1	3,784,353	1,730,698	494	3	45	8.3
	1941	7,109	1,193,594	1,229,653	24,163	37,917	67.9	2,363,636	1,001,301	409	28	61	12.2
Texas & Pacific	1942	1,887	391,891	391,891	3,976	11,916	62.3	865,630	309,991	103	14	43	26.9
	1941	1,891	301,910	301,910	1,665	10,131	61.7	650,486	224,549	78	23	86	46.0
St. Louis-San Francisco†	1942	4,731	974,454	1,033,768	20,706	22,394	58.3	1,564,599	640,400	324	..	17	5.0
	1941	4,735	795,612	823,890	14,407	18,480	63.8	1,189,044	481,636	277	10	36	11.1
St. Louis-San Fran. & Texas	1942	159	38,944	40,311	38	594	56.8	42,271	15,971	10	..	1	9.1
	1941	159	28,047	28,145	30	460	58.6	31,716	10,583	13	..	1	7.1
St. Louis Southw. Lines†	1942	1,600	534,475	545,440	6,832	17,370	63.0	1,123,609	454,639	115	3	14	10.6
	1941	1,600	346,429	353,341	4,635	10,982	65.4	657,992	249,599	88	11	23	18.9
Texas & New Orleans	1942	4,400	940,583	942,330	15,003	24,783	62.2	1,704,336	715,066	228	9	23	8.8
	1941	4,415	730,054	730,370	12,820	18,317	62.6	1,215,481	469,250	221	6	36	13.7

* Report of receivers.
† Report of trustee or trustees.

for the Month of June 1942, Compared with June 1941,

Region, road, and year	Number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive miles per locomotive-day
New England Region:													
Boston & Albany 1942	538	6,288	6,826	0.2	31,068	1,907	784	29.0	801	47.8	15,119	132	121.2
1941	655	5,654	6,309	1.9	23,521	1,372	524	22.9	450	30.1	7,904	139	78.9
Boston & Maine 1942	3,422	9,305	12,727	2.5	34,747	2,287	1,001	29.3	1,043	56.4	6,967	86	99.7
1941	3,492	10,402	13,894	2.7	30,716	2,216	878	22.6	686	43.6	4,963	89	86.1
N. Y., New H. & Hartf.† 1942	4,902	18,671	23,573	3.0	33,621	2,338	990	26.8	692	40.3	8,867	90	99.1
1941	3,956	19,616	23,472	2.7	30,068	2,130	833	21.9	529	35.7	6,611	95	83.8
Great Lakes Region:													
Delaware & Hudson 1942	6,651	5,392	12,043	4.7	40,714	2,677	1,350	37.4	1,258	54.6	19,045	96	81.2
1941	6,142	5,434	11,576	4.5	39,984	2,517	1,209	31.9	1,048	50.3	14,215	98	57.0
Del., Lack. & Western 1942	8,377	9,324	17,701	2.4	45,845	2,883	1,330	31.9	902	44.7	16,259	111	88.9
1941	7,331	9,948	17,279	3.5	41,505	2,438	1,061	25.7	772	41.7	13,742	119	83.6
Erie 1942	12,906	21,772	34,678	2.3	50,289	2,983	1,247	29.8	1,020	55.2	16,216	86	90.6
1941	11,152	20,721	31,873	2.3	48,614	2,822	1,132	24.7	951	56.8	13,423	86	79.0
Grand Trunk Western 1942	3,829	6,356	10,185	3.3	42,412	2,166	888	27.1	702	41.2	6,897	73	111.6
1941	3,083	9,152	12,235	6.1	38,153	2,047	737	22.2	557	39.6	6,436	77	110.4
Lehigh Valley 1942	7,920	17,521	25,441	1.7	50,372	3,005	1,412	33.2	856	41.7	17,598	98	129.2
1941	6,255	13,126	19,381	1.0	50,522	2,756	1,239	28.5	795	40.7	12,568	98	96.3
New York Central 1942	67,196	73,833	141,029	3.9	45,244	2,708	1,213	33.0	1,017	53.2	13,739	87	110.0
1941	64,561	76,891	141,452	7.2	42,157	2,503	1,084	29.2	787	43.6	10,612	90	95.4
New York, Chi. & St. L. 1942	6,065	13,012	19,077	1.9	44,463	2,449	1,049	29.2	1,605	89.6	18,425	80	177.9
1941	3,942	10,488	14,430	2.4	45,445	2,370	958	24.5	1,358	81.8	11,619	79	138.9
Pere Marquette 1942	6,498	6,663	13,161	3.1	34,758	1,991	877	30.8	832	44.0	5,449	82	89.4
1941	4,936	9,417	14,353	2.8	31,309	1,815	736	25.1	664	39.7	4,711	89	100.9
Pitts. & Lake Erie 1942	5,998	7,127	13,125	8.4	51,499	3,709	2,183	51.7	599	18.5	33,697	72	64.5
1941	6,798	8,154	14,952	10.0	47,042	3,726	2,179	49.4	489	15.3	31,148	78	64.8
Wabash* 1942	10,727	13,536	24,263	0.8	44,855	2,344	986	28.5	1,058	60.1	10,463	96	118.9
1941	8,252	13,114	21,366	0.9	42,726	2,080	784	22.3	789	51.9	6,994	96	90.7
Central Eastern Region:													
Baltimore & Ohio 1942	48,424	44,180	92,604	2.6	32,233	2,422	1,147	35.2	961	45.8	14,480	129	101.9
1941	42,231	39,304	81,535	3.1	31,823	2,371	1,103	32.2	852	41.7	11,127	129	82.5
Central of New Jersey† 1942	8,246	19,457	27,703	1.1	30,122	2,499	1,241	37.8	377	16.1	15,321	116	104.1
1941	5,010	16,742	21,752	3.2	30,577	2,405	1,222	36.2	406	18.3	12,215	121	83.5
Chicago & Eastern Ill. 1942	2,559	3,094	5,653	3.3	33,677	1,849	851	31.2	999	49.6	6,132	115	110.9
1941	2,832	3,582	6,414	5.6	31,985	1,709	721	25.5	672	38.7	4,661	113	71.1
Elgin, Joliet & Eastern 1942	8,576	6,272	14,848	3.6	18,860	2,189	1,152	41.2	358	13.7	13,745	116	88.6
1941	9,769	8,154	17,923	4.2	17,141	2,218	1,124	39.5	261	10.9	11,921	104	82.8
Long Island 1942	65	3,650	3,715	0.6	6,416	819	349	33.8	94	5.3	930	305	49.8
1941	67	4,327	4,394	0.4	6,072	817	326	29.9	75	4.7	816	285	48.8
Pennsylvania System 1942	151,871	94,132	246,003	3.7	39,856	2,812	1,323	34.6	831	40.2	20,740	106	106.6
1941	153,951	87,431	241,382	9.7	38,518	2,765	1,285	31.9	685	33.5	16,552	107	89.8
Reading 1942	18,142	19,067	37,209	4.9	30,176	2,408	1,231	40.4	643	27.0	17,359	111	88.2
1941	16,642	19,608	36,250	8.1	28,538	2,245	1,133	35.4	526	22.8	13,295	124	72.0
Pocahontas Region:													
Chesapeake & Ohio 1942	40,452	15,557	56,009	1.3	59,858	4,075	2,248	48.2	1,404	52.7	26,397	65	91.0
1941	37,836	16,475	54,311	1.2	61,109	4,165	2,313	46.9	1,401	52.0	25,299	64	82.5
Norfolk & Western 1942	36,525	6,834	43,359	1.5	61,642	3,931	2,083	46.3	1,296	50.1	25,168	81	93.9
1941	30,175	7,323	37,498	1.2	63,430	4,008	2,135	45.2	1,426	54.4	25,399	78	90.7
Southern Region:													
Atlantic Coast Line 1942	9,920	12,772	22,692	4.0	28,380	1,685	726	28.3	898	49.8	4,510	105	91.6
1941	9,831	9,881	19,712	10.2	24,961	1,436	555	23.6	651	43.2	2,730	106	79.4
Central of Georgia† 1942	3,360	6,069	9,429	1.0	26,158	1,466	615	27.2	662	37.5	3,387	115	91.8
1941	3,162	6,608	9,770	0.4	26,137	1,345	552	24.1	632	37.0	3,033	113	96.4
Gulf Mobile & Ohio 1942	3,486	6,809	10,295	1.1	40,722	2,217	1,023	29.4	1,151	56.7	5,870	103	126.9
1941	2,451	4,246	6,697	2.6	36,595	1,960	820	25.1	1,023	59.5	3,664	100	98.9
Illinois Central (incl. 1942	27,155	25,668	52,823	1.2	39,764	2,448	1,080	31.7	1,225	66.1	9,884	102	92.5
Yazoo & Miss. Vy.) 1941	25,365	20,070	45,435	2.2	34,075	2,042	867	27.1	878	50.2	6,106	114	71.3
Louisville & Nashville 1942	35,630	18,304	53,934	2.1	27,167	1,804	870	36.1	869	41.4	9,871	118	135.5
1941	28,718	12,411	41,129	3.6	29,730	1,817	856	33.3	988	49.6	8,449	112	121.2
Seaboard Air Line* 1942	9,210	14,819	24,029	1.9	28,863	1,773	797	29.8	921	47.3	5,511	123	119.0
1941	8,790	9,957	18,747	2.4	28,465	1,621	653	25.0	781	48.4	3,581	116	93.8
Southern 1942	20,185	29,539	49,724	2.1	24,162	1,442	633	28.7	835	45.9	6,431	137	106.8
1941	19,592	22,741	42,333	6.4	24,202	1,402	591	24.8	753	44.4	5,092	131	94.3
Northwestern Region:													
Chi. & North Western† 1942	29,933	25,123	55,056	4.3	34,523	2,280	992	30.5	607	31.2	3,824	105	70.7
1941	31,076	26,365	57,441	6.3	32,674	2,163	902	26.5	463	26.8	3,232	106	62.5
Chicago Great Western 1942	2,033	3,473	5,506	1.4	35,821	1,969	808	27.4	1,307	74.7	4,957	108	113.0
1941	1,830	4,214	6,044	1.9	36,095	1,974	743	23.5	1,118	73.9	4,540	105	116.3
Chi., Milw., St. P. & Pac.† 1942	36,216	20,174	56,390	1.3	35,463	2,201	1,021	31.6	809	38.9	4,280	108	87.7
1941	38,162	26,782	64,944	1.1	34,309	2,101	871	27.4	619	36.4	3,655	106	89.6
Chi., St. P., Minneap. & Om. 1942	1,820	6,549	8,369	3.7	22,084	1,657	713	29.2	612	32.7	3,141	102	66.1
1941	1,686	6,386	8,072	6.1	21,610	1,606	636	24.1	557	33.8	2,761	100	62.5
Duluth, Missabe & Iron Range. 1942	13,116	506	13,622	2.0	79,644	4,853	2,941	53.4	1,285	47.1	31,841	57	123.6
1941	13,062	459	13,521	0.9	81,213	4,725	2,899	54.4	1,037	37.0	25,685	61	113.9
Great Northern 1942	32,495	11,540	44,035	2.0	45,932	2,922	1,495	38.3	1,204	48.4	6,647	82	81.3
1941	28,959	10,250	39,209	3.3	43,791	2,765	1,299	34.5	1,087	50.6	5,293	86	71.0
Minneap., St. P. & S. St. M.† 1942	10,493	4,535	15,028	2.4	30,921	1,817	833	32.2	817	40.9	2,942	86	116.4
1941	10,820	5,131	15,951	3.0	28,673	1,729	762	27.6	663	36.7	2,487	88	113.5
Northern Pacific 1942	27,014	9,489	36,503	4.9	40,370	2,538	1,232	31.9	992	43.0	5,391	117	82.3
1941	25,483	6,810	32,293	7.2	38,360	2,328	984	26.7	784	43.6	3,958	117	74.0
Central Western Region:													
Alton 1942	1,272	5,100	6,372	6.8	41,346	1,802	798	29.6	1,051	54.2	7,880	119	145.4
1941	1,071	6,475	7,546	4.2	37,938	1,498	597	24.2	628	40.3	4,950	133	117.2
Atch., Top & S. Fe. (incl. 1942	62,349	31,222	93,571	3.7	41,764	2,236	833	27.0	980	61.3	6,756	108	142.2
G. C. & S. F. & P. & S. F.) 1941	61,428	28,247	89,675	4.6	38,389	2,008	707	23.3	725	50.5	4,587	112	122.3
Chi., Burl. & Quincy 1942	24,925	18,815	43,740	3.0	38,159	2,256	1,042	31.7	1,067	52.1	5,016	98	95.0
1941	21,910	20,260	42,170	2.5	35,524	2,066	878	26.8	826	45.9	3,913	99	84.3
Chi., Rock I. & Pac.† 1942	17,654	15,153	32,807	3.2	33,786	1,843	744	27.9	982	58.7	4,054	104	100.1
1941	19,180	16,059	35,239	2.7	32,445	1,756	679	24.8	821	53.6	3,530	101	93.2
Denver & R. G. Wn.† 1942	9,583	5,709	15,292	2.8	33,797	2,063	988	31.1	917	41.7	5,532	152	97.5
1941	10,243	3,523	13,766	3.6	33,713	1,944	872	27.6	614	31.0	3,295	147	70.7
Southern Pacific—Pacific 1942	28,571	42,036	70,607	2.3	35,549	2,497	1,008	27.3	1,087	62.2	9,009	99	112.1
Lines 1941	27,892	33,995	61,887	2.9	37,233	2,396	866	23.0	895	60.4	6,411	97	107.5
Union Pacific 1942	37,805	28,260	66,065	4.7	45,414	2,301	1,024	28.6	1,192	60.0	7,990	113	104.0
1941	35,013	24,830	59,843	5.5	41,247	1,900	727	23.1	949	60.9	5,605	119	104.9
Southwestern Region:													
Mo.-Kans.-Texas Lines 1942	4,298	8,488	12,786	4.5	32,004	1,756	707	26.8	1,013	62.3	3,903	82	113.7
1941	5,407	5,941	11,348	11.0	31,721	1,647	631	23.5	864	57.1	2,791	79	90.0
Missouri Pacific† 1942	16,925	29,806	46,731	1.1	37,124	2,234	1,021	32.4	1,279	65.8	8,123	102	119.4
1941	15,729	25,061	40,790	1.8	35,536	1,992	844	26.4	861	48.0	4,695	107	90.2
Texas & Pacific 1942	3,053	5,966	9,019	2.3	41,085	2,226	797	26.0	1,154	71.2	5,476	85	86.7
1941	2,527	5,328	7,855	1.4	43,496	2,161	746	22.2	964	70.5	3,958	80	57.6
St. Louis-San Francisco† 1942	13,220	8,880	22,100	2.7	32,172	1,612	660	28.6	976	58.6	4,512	114	107.5
1941	16,385	8,144	24,529	2.5	30,431	1,502	608	26.1	637	38.3	3,391	111	91.2
St. Louis-San Fran. & Texas. 1942	....	335	335	11.3	20,460	1,096	414	26.9	1,449	94.9	3,348	123	118.2
1941	....	578	578	2.6	23,740	1,131	378	23.0	671	49.7	2,219	119	67.9
St. Louis Southw. Lines† 1942	2,458	7,950	10,408	1.1	32,929	2,116	856	26.2	1,530	92.7	9,472	75	149.0
1941	1,590	3,906	5,496	1.6	37,179	1,907	723	22.7	1,311	88.2	5,200	76	104.8
Texas & New Orleans 1942	4,538	19,189	23,727	1.9	33,765	1,826	766	28.9	1,008	56.1	5,417	80	129.2
1941	4,649	12,372	17,021	3.5	32,636	1,678	648	25.6	891	55.6	3,543	84	99.3

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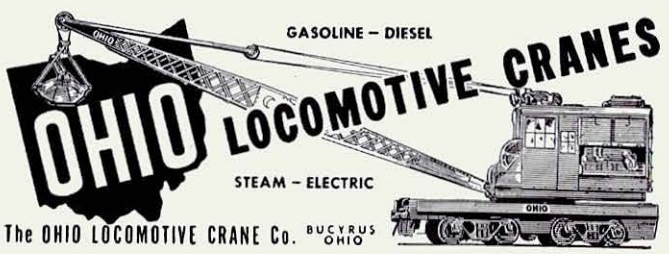

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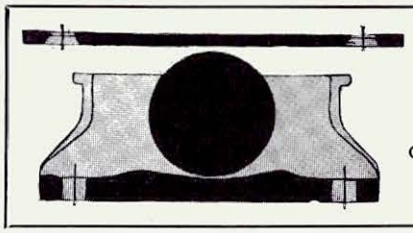

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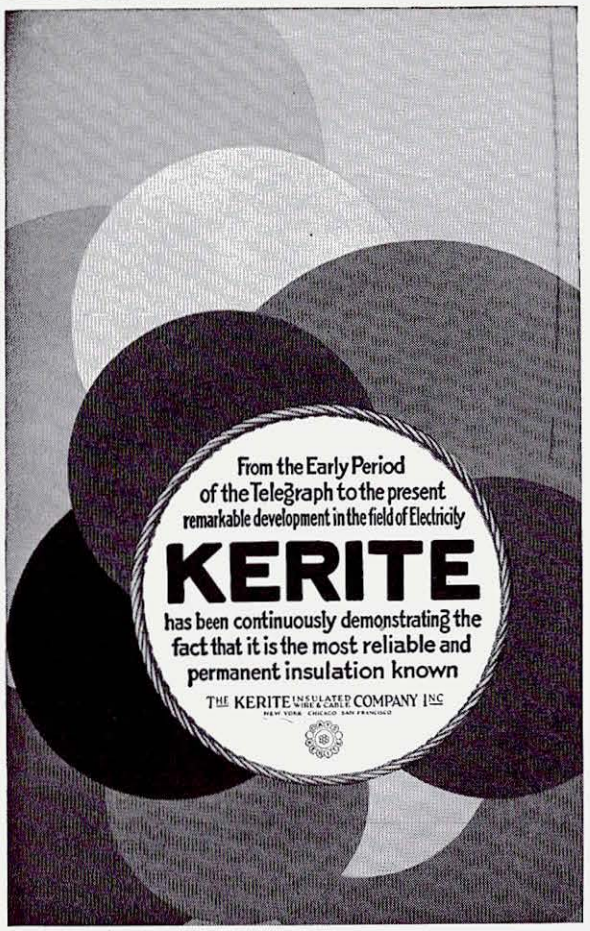
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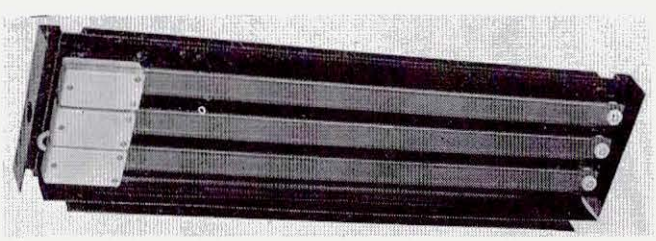

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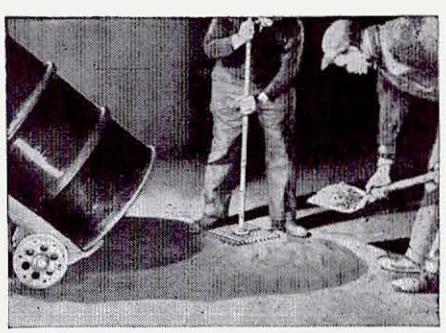

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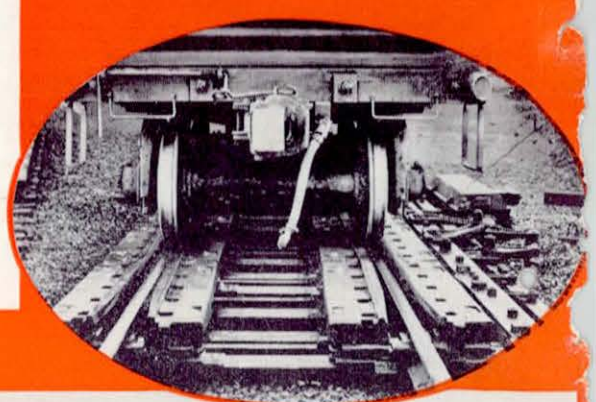

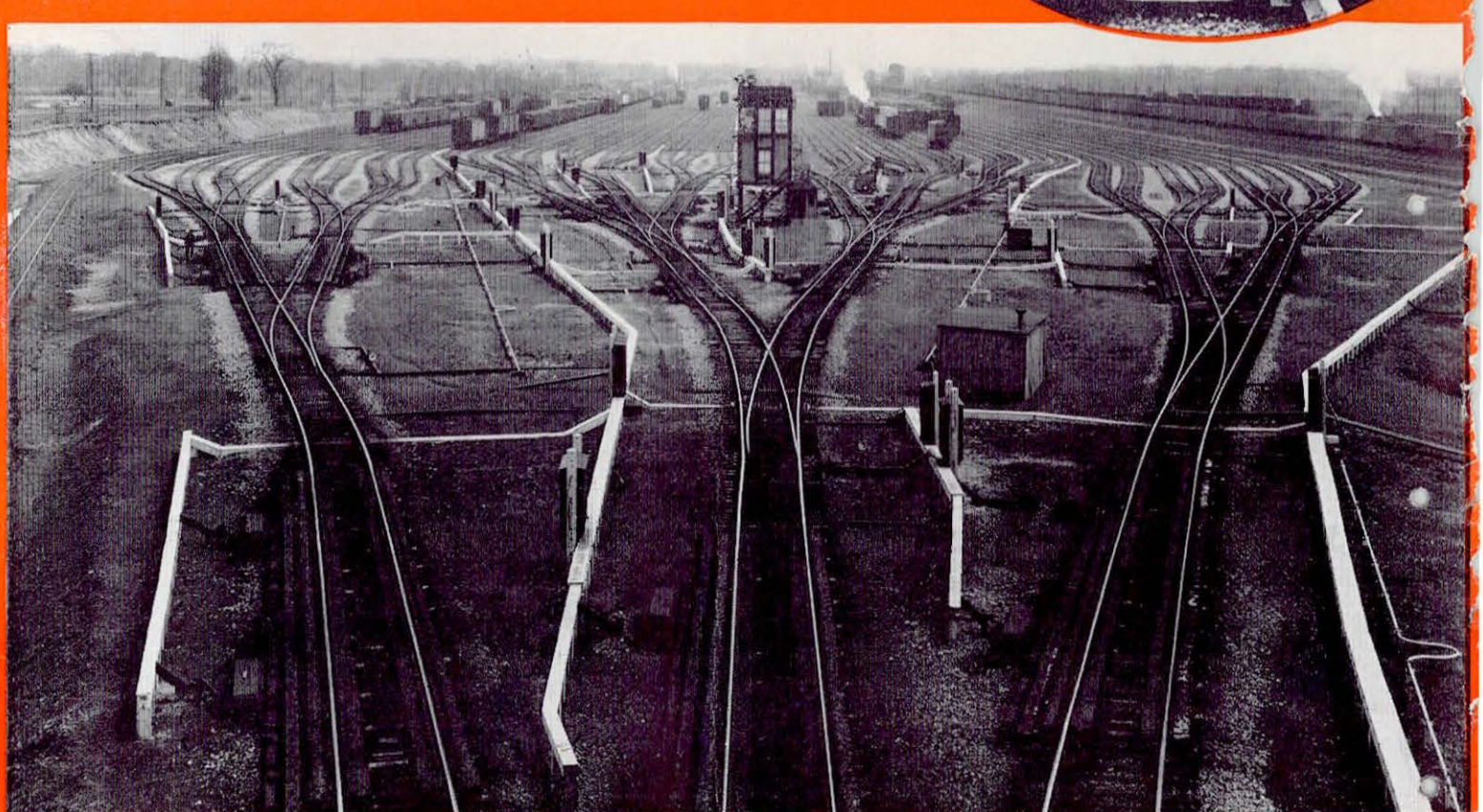

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